

Flight, July 8, 1911.

FLIGHT

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OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM.

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GORDON-BENNETT RACE AT EASTCHURCH.—General view of the motor cars lined up alongside the course in the members' car enclosure.

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AND THE PITY OF IT!!!

LOVE, we are told, is blind, and doubtless the student of human nature will agree with the maker of proverbs that the balance of fact is on the side of its blindness. But was ever love as purblind as the red-tape swathed official who refuses to use the faculties with which Nature has endowed him and who cries: "All's well!" when it is patent to others that all is distinctly not well with things? Never, we trow, was anything half so blind or deaf as the official mind in the abstract—and we question if the blindest and deafest of them all be not the mind of our own official class. These are hard words, perhaps, and it is for those who use them to find justification for so sweeping an indictment. And the pity of it is that there is only too full a measure of justification for such an expression of opinion, at any rate so far as the development of flying in relation to the British sea service is concerned. The signs and portents of the times are easily read—too easily, in fact, by the thoughtful man who examines the development of the science in the light of our position as an insular country.

It is two years since Louis Blériot first demonstrated that all frontiers, sea as well as land, are alike to the aeroplane. It reckons nought of artificial demarcations or boundaries, whether they be of the nature of the silver streak, or the natural barriers formed by mountain ranges, or the purely imaginary line drawn by the geographer and the politician. And what has happened in the meantime? We will not weary our readers by a recapitulation of the happenings of the intervening four-and-twenty months—they are as familiar to them as to ourselves and it requires but a few minutes' thought to recall many occurrences which will in the future be held to have helped to make history. On the Continent the signs have been read aright and the Governments have strained every nerve to ensure that they shall not be left behind in the race for the supremacy of the air. Not a Continental Power of first or second class but has turned its close and earnest attention to the elucidation of the manifold problems of aerial defence, and certainly not one of them but could, if occasion arose, put into the field an aerial force which would have to be very seriously reckoned with by a possible enemy. So much is beyond dispute.

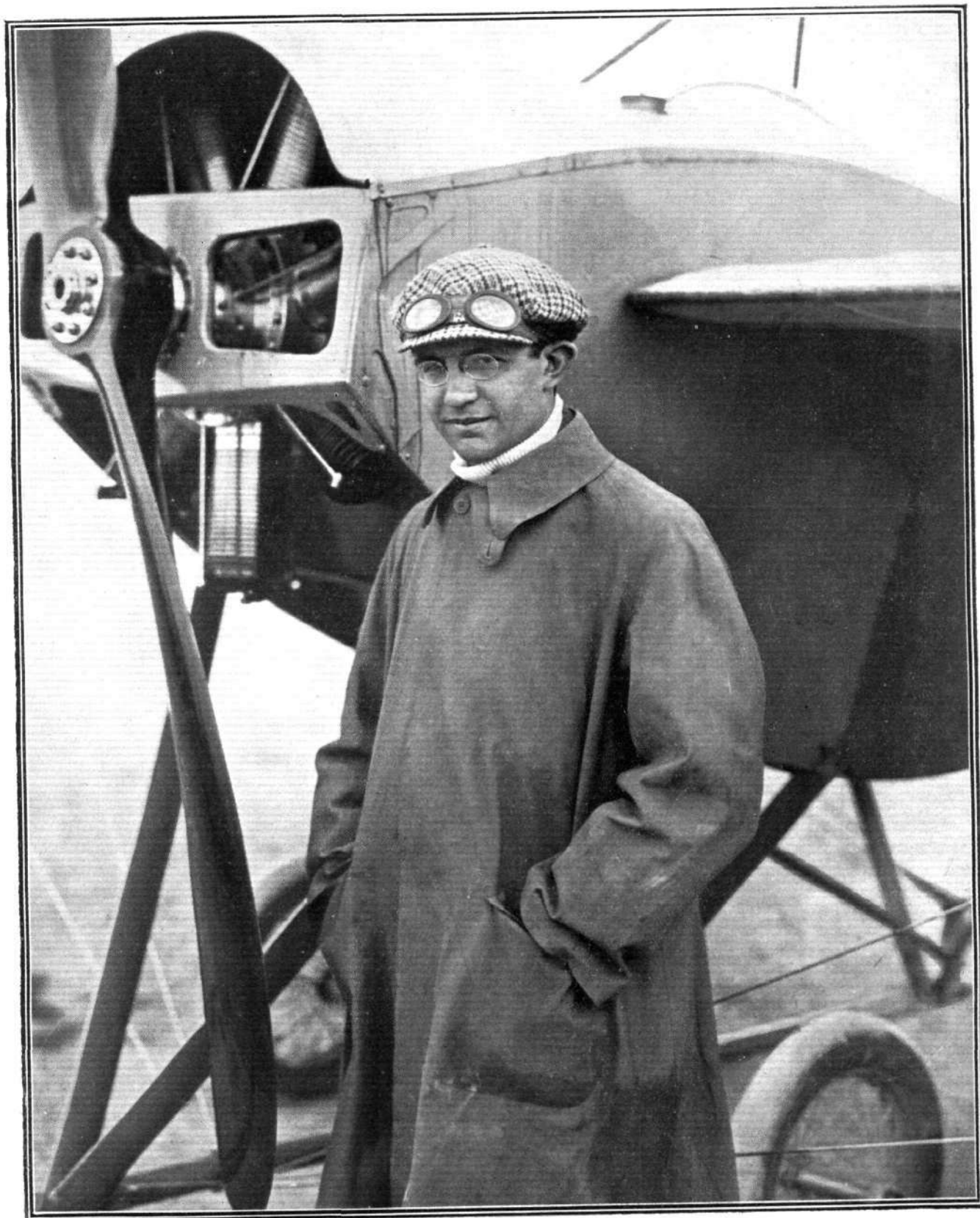
On this side of the Channel something very like neglect has been the order of the day. True, our War Office authorities have shown signs of waking out of their lethargy, and we have the nucleus of an effective force, though it is even stretching the term to call it that. However, something has been done, and we can look forward to more being accomplished in the very near future, when the lessons which must inevitably be learnt during the autumn manœuvres are taken to heart, if it should happen that lessons appeal to the directors of our military policy. But it is of the Navy of which we would speak at the moment. Two years ago, when flight was unfledged, and a comparatively sickly nestling at that, the Imperial Defence Committee drew an arbitrary line between the two branches of aeronautics, and handed over the dirigible to the Navy to foster and care for, and allotted the aeroplane to the Army. Its duty, as the Council apparently conceived it, was done, and a matter once settled by officialdom is over and done with for all time.

Thus it comes that at the end of two rapid years of progress we stand where we did. The Navy has a beautiful silvery leviathan in the mystery airship at Barrow. We know that the Navy has it, for have not its photographs been published in all the papers?

Therefore, we are prepared to lay odds that the Navy *has* something which looks like an airship but—well, it may fly or it may not. But stay—the situation is not so bad as all that. It cannot have official help or public money, but it may be spoon-fed by the public spirit of individuals. In other and brutally plain words, the greatest fighting force the world has ever seen, a service with records and traditions that are the envy of the nations, must be allowed to perfect its fighting efficiency by the aid of private charity. That is the position of the Navy in relation to the aeroplane—and partly that of the Army, for that matter—and we trust most sincerely that the public will find the facts soothing to its national self-esteem. That is how the matter stands—the Navy possesses two Valkyries, presented to a parsimonious Government by Mr. Barber, the public-spirited manufacturer of the machine, an enthusiastic worker on original and scientific lines, who has expended much time and money in the perfecting of a practical machine. Fortunately, the Naval officer is keener than those who hold his fate in their hands, and we have several who, at their own proper cost and charge, have learnt to fly, with the patriotic assistance so freely accorded by the Royal Aero Club and Mr. Frank McClean, or it is quite possible that the senior service would find the gift a species of white elephant.

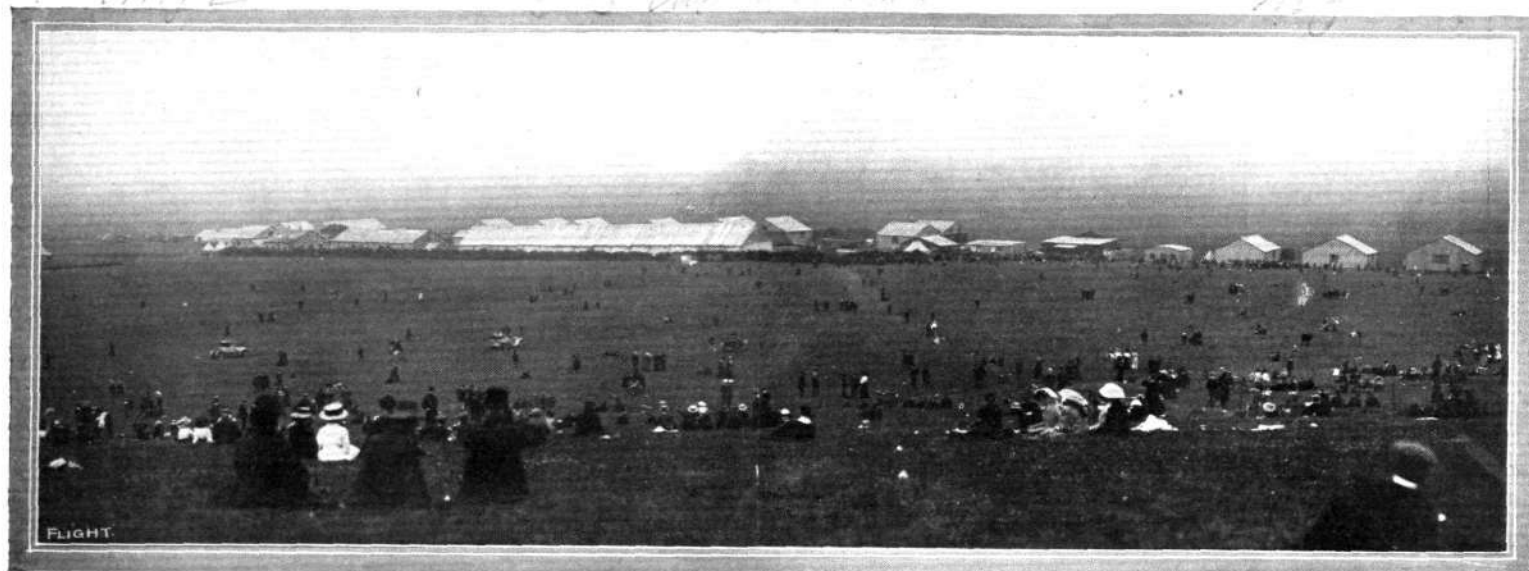
What is the reason for the continued apathy of those who give decisions? Can it be that they do not believe in the future of flight? Or do they think that we are so well guarded by our natural boundaries that there is no need to worry? Or do they believe sincerely that the aeroplane will always remain a machine which can operate only over land? It stands out as a self-evident proposition that provided that for some cause or other it were necessary that the development of the military aeroplane should be left to one, and one only, of the services, that service should be in our own case the Navy. It is as true of the air as of the sea, that our first line of defence should be the enemy's frontier. In our next great war the issues will be fought out, not on Continental soil, but at sea. Once our sea frontier is broken down, and it does not matter in the very slightest by what agency—battleship, submarine, or aeroplane—the rest is comparatively easy for the opposition. No one with any pretensions to an understanding of the question but realises that once such a contingency came about we can be starved into submission in a very few weeks. Therefore, it is patent that we must take advantage of every development in order to ensure that our sea frontier may be held inviolate. Nothing we can do, of course, will ever insure that we shall not be open to isolated raids by aeroplane in which a good deal of damage may be done. That, too, is a rule which works both ways. What it is essential for us to guard against is that the result of our first great naval battle shall not be swayed in favour of a power below our fighting standard in vessels that navigate the air by a superior force. For the purposes of naval war it is necessary to develop a special type of aircraft—and we are doing nothing at all towards it. All the experimental work on land will not help materially towards the evolution of the type for marine use—that can only be done on and over the element above which their functions will lie, and it is equally obvious that it is for the service which will have to use them to carry out the development necessary. Will the Government, which can find money for the payment of Members of Parliament, continue to grudge the necessary paltry outlay?

FLIGHT PIONEERS.



C. T. Weymann, who, on his Nieuport machine, secured the Gordon-Bennett Cup for America in last Saturday's race at the Royal Aero Club's flying grounds, Eastchurch.

THE GORDON-BENNETT CUP RACE.

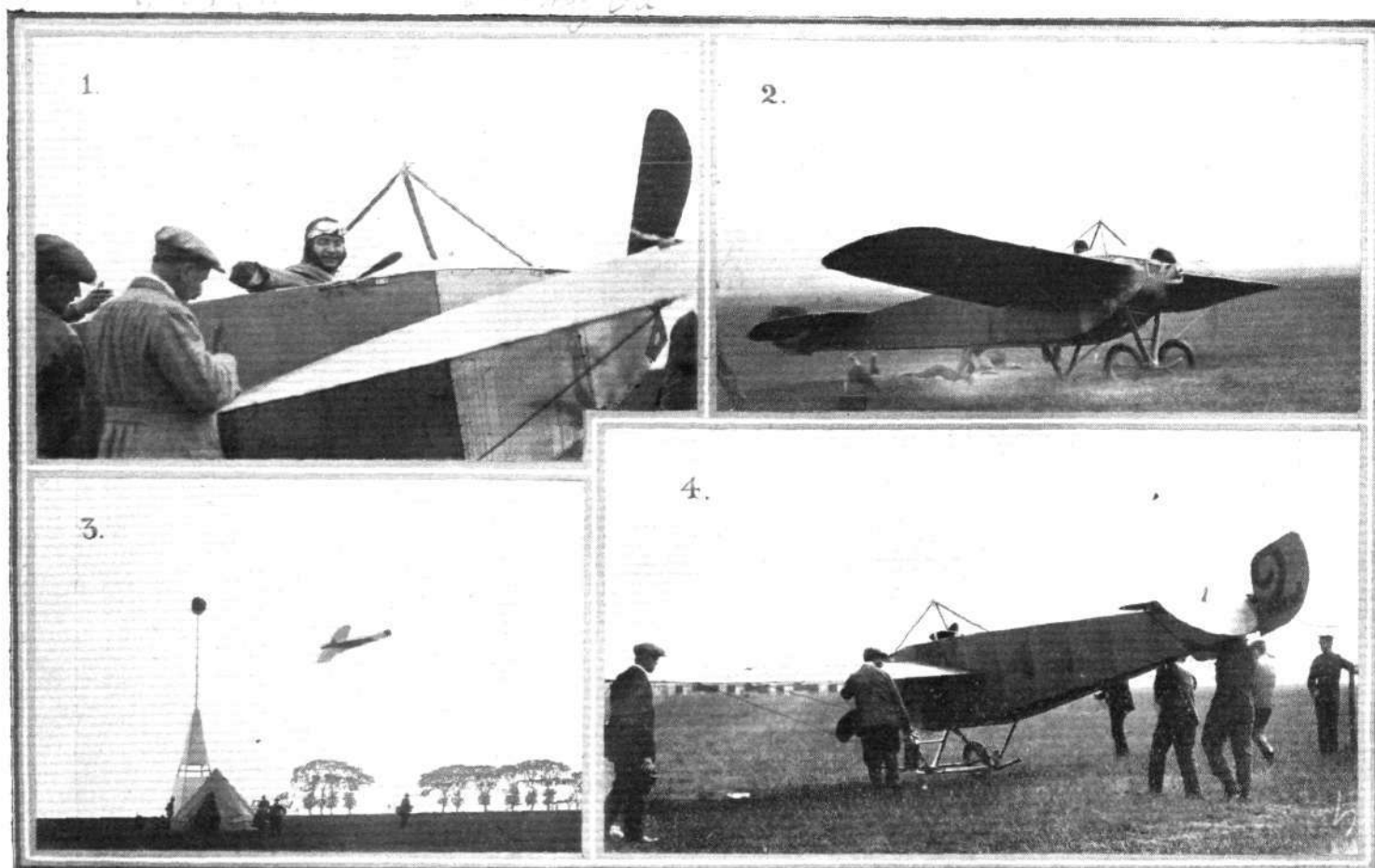


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GORDON-BENNETT RACE AT EASTCHURCH.—General view of the hangars and the flight village at Eastchurch, as seen from the natural grand stand on the hill at the back, during the race last Saturday. On the left is seen the long line of motor cars stretching away in the distance.

ONCE more, for the third time, the Gordon-Bennett Aviation Cup has been won and lost, and Americans are justly proud of their champions, who in the first race lifted the Cup in a machine designed and constructed in America, and by way of contrast this year again annexed the coveted prize by beating both the French makers and the aviators on one of their own machines side by side with similar

models. That Weymann thoroughly deserved his win there can be no question. He piloted his Nieuport admirably from first to last without a waver, and by his record and that of his sister Nieuport machine, with M. Nieuport himself in the pilot's seat, the disappointing results from Chevalier's mounts were more than compensated for. That there should only be a bare 3 mins.



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GORDON-BENNETT RACE AT EASTCHURCH.—Mr. Weymann, the winner on behalf of America, and his Nieuport monoplane. (1) Just before being timed away for his start; (2) getting away; (3) sharp banking round No. 1 pylon; and (4) bringing home the Nieuport after the race was won.

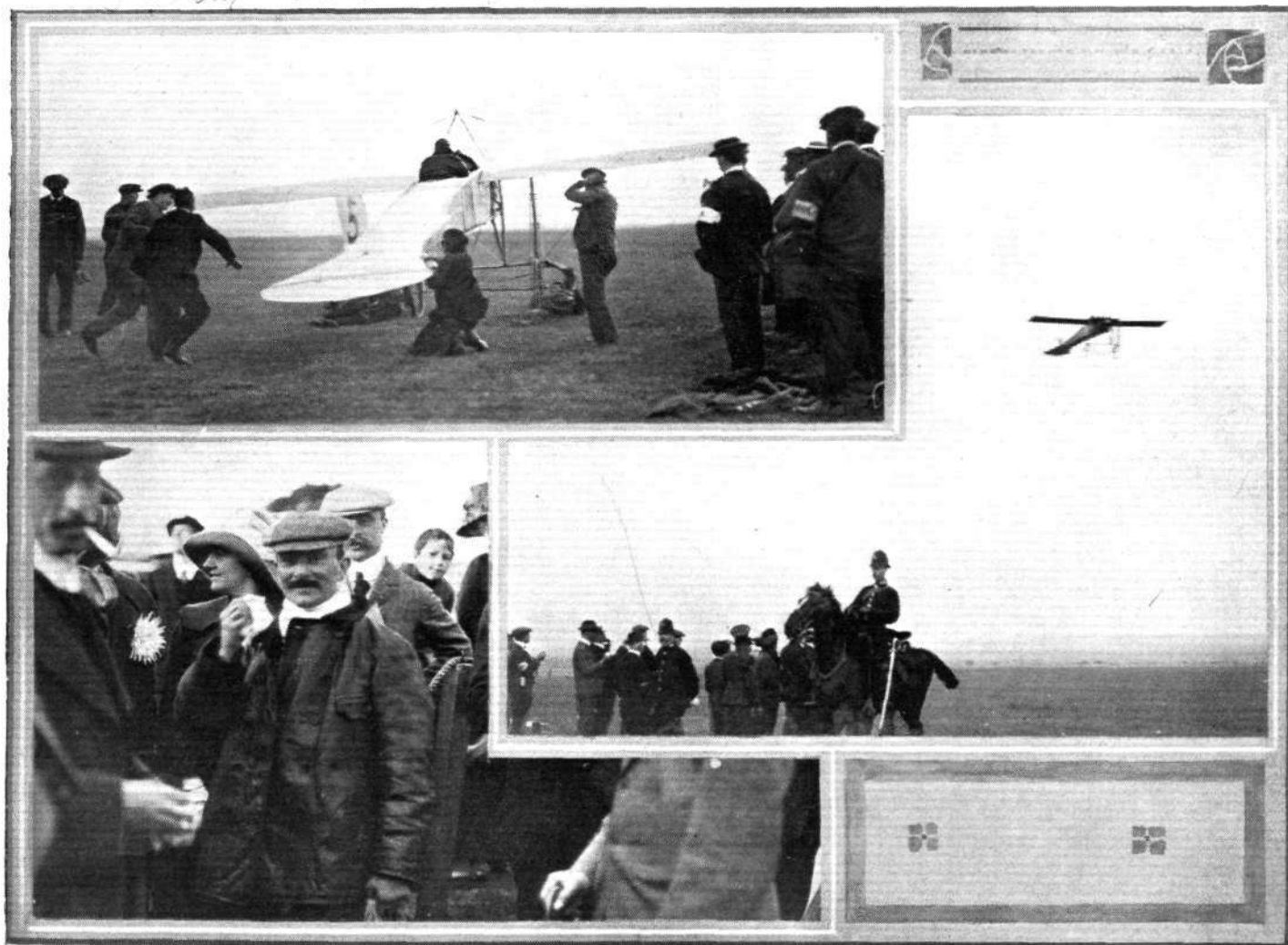
between the first three competitors in this race over 150 kiloms. (equivalent to approximately 94 miles) is very convincing evidence that the makers have attained to a degree of efficiency with existing machines by which they are able to get every ounce of speed out of them. Although mere speed may not appear to be immediately to the benefit of the industry, especially as to attain the maximum the machines must be reduced to the very closest margin of safety, there can be little doubt that very valuable and practical lessons are begotten from the experience thereby gained, which ultimately must tend to the advancement of practical aviation. It is only by striving for and attaining a specific object, in this case high speed, that data for the future can be obtained. It is just a repetition of the early days of motorism. When speeds of 20 miles an hour were reached, throughout the country a wave of protest arose that any attempt should be made to exceed such an outrageous pace. But the racing continued, and by degrees the lessons learned one by one by the manufacturers in their endeavours to get ahead of each other, led to the evolution of the magnificent and reliable motor car of the present day, which has become practically part of the nation's life. In like manner, therefore, it may be deplored by some that up to the present in competitions of this character it is speed pure and simple which is sought after, and all other side issues sacrificed to this one object, but it should be remembered that this is but a single item in the great struggle to obtain not only the ultimate stable machine but probably the speediest means of locomotion which the world has ever known. We hardly think that after the present year's contest the Gordon-Bennett Cup will be competed for under similar conditions again, and it is as well that this should be so, as the mere circling of an aerodrome for hours at a time is not likely, beyond the attainment of higher speed, to advance the science in any material way.

The work of M. Leblanc on his Blériot, who was 1h. 13m. 40½s., a little under 2 minutes longer than the winner, and of M. E. Nieuport's time of 1h. 14m. 37½s., on the top of Mr. Weymann's

premier performance, constitute a magnificent monument to the ability of the French to build such efficient machines. In hardly less degree is Mr. Alec Ogilvie, with his "Baby" Wright, deserving of praise. That he should have been able to put up an average speed of over 51 miles an hour with this remarkable little biplane is a triumph for that type of machine. The steadiness with which he covered circuit after circuit, and the way in which he was able to hug the various mark towers on his machine, give the greatest confidence in the future of biplanes for useful and commercial purposes.

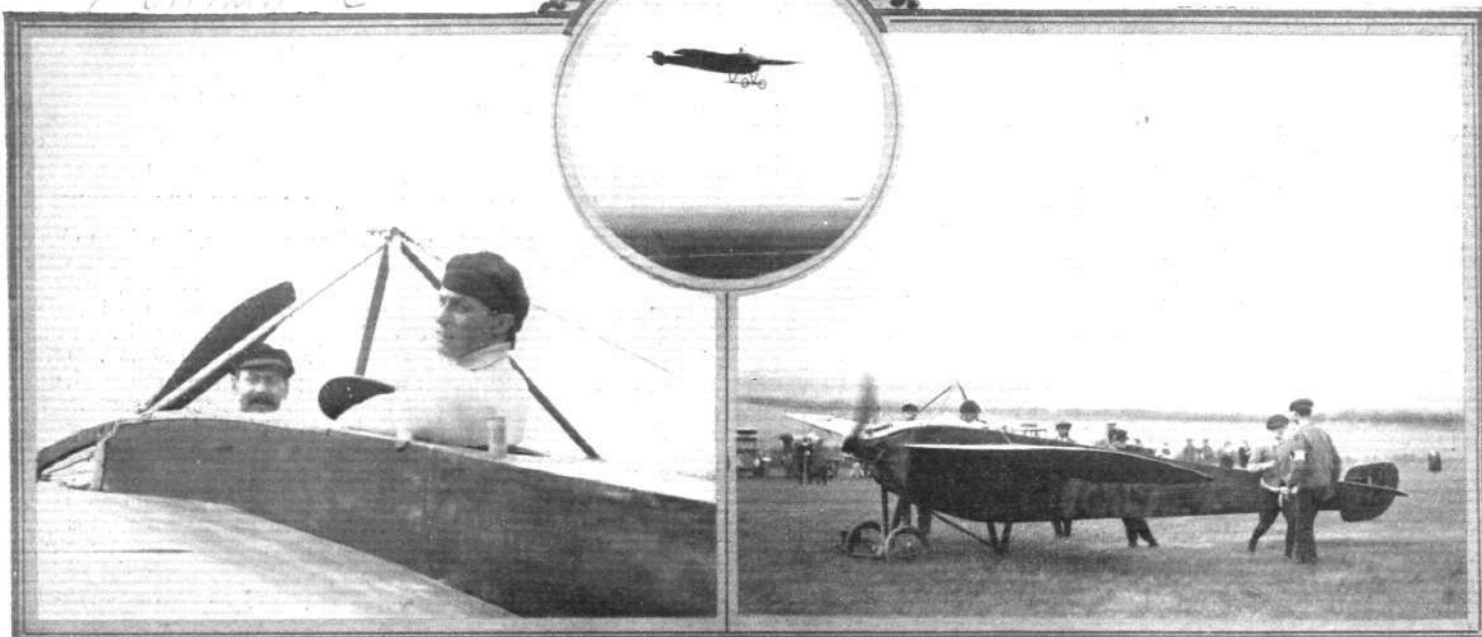
The whole event must be written down a success from first to last. All the anticipations which so many people had forecasted for it were belied. Contrary to all anticipations, an enormous crowd, numbering fully 10,000, made for Eastchurch. So great was the invasion that it was with the greatest difficulty, under the conditions, that they were transported by the Chatham and Dover Railway. Over 200 cars brought a contingent numbering well up to a thousand, and these ranged along the back of the members' enclosure supplied an imposing and splendid background to the keenly interested crowd who watched every evolution of the machines, both in practice and during the race. Some had also journeyed over by way of the air, Eric England having flown from Brooklands in the morning on a Bristol, whilst H. R. Fleming and C. P. Pizey had started from Salisbury Plain, also on Bristols, and after touching at Brooklands *en route*, descended at Rochester, from which point they motored the rest of the way to Eastchurch, returning subsequently on their machines by way of the air.

Although during the morning of the race it was dull and threatening, with a strong inclination to a puffy wind, a rain storm which broke just before one o'clock, sending a big contingent of the visitors off for lunch perhaps earlier than they might have otherwise wished, cleared the air and gave promise of a brighter outlook, which did not belie itself later. As the day wore on, the wind inclined to lessen, and the clouds ultimately gave way to welcome and continuous



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GORDON-BENNETT RACE AT EASTCHURCH.—M. Leblanc and his Blériot machine, with which he secured second place in the race. Below, M. Leblanc is seen immediately after finishing; above, he is just off for the race; and on the right he is in flight over the course.



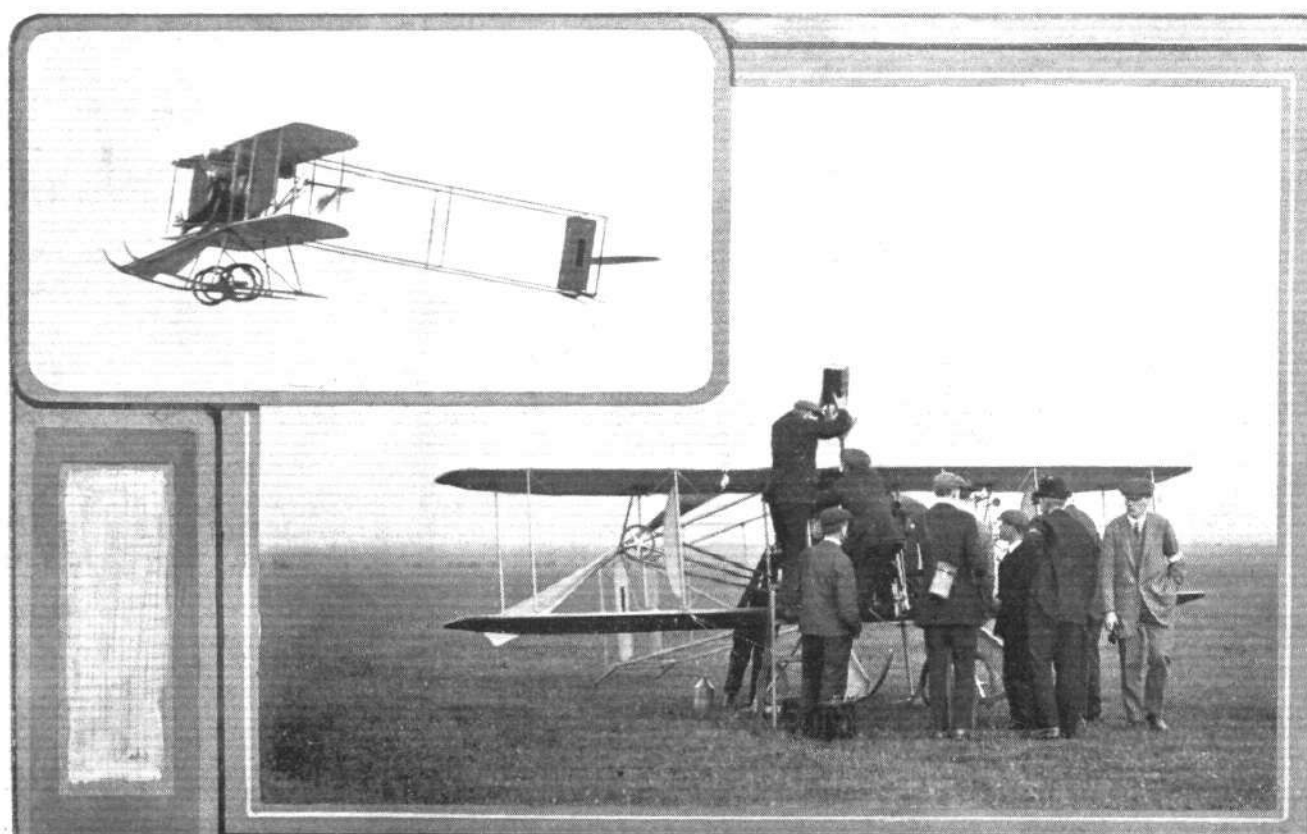
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GORDON-BENNETT RACE AT EASTCHURCH.—M. Chevalier, who flew two Nieuports in the race, just before his start. Inset is M. E. Nieuport flying his Nieuport machine in the race.

sunshine, much to the relief and enjoyment of the thousands who had gathered in the members' and other enclosures and especially those who had taken up their places on Stamford Hill, a fine natural grand stand which gave a splendid view of the entire course from end to end.

The day prior to the race several of the French representatives and Weymann had been out trying their machines, and again early on the Saturday morning, Hamel, Nieuport, Weymann, and Ogilvie were all making tests. Leblanc, unfortunately, was too unwell to take his turn; in fact, at one time it was thought that he would not be able to participate in the race itself. During these trials, Weymann's Nieuport was timed better than Hamel's Blériot by 5 secs. or

more, and it was this that prompted M. Louis Blériot to modify Hamel's machine by clipping off the end of each wing, bringing the full span within about 17 ft. Under the conditions, Hamel was able to get better results, although it necessitated a wider sweep at the mark towers, and during one of his practice trials on the shortened machine we timed him for 2 mins. 45 $\frac{1}{2}$ secs. for the full circuit. We have little doubt that when he actually started in the race, had he taken the same sweep at the first mark tower, he would unquestionably have given a very splendid account of his mount on behalf of Great Britain, as he was handling her in the trials in perfect manner, and the Blériot appeared to answer to her pilot's wishes with instant response. Unfortunately, it appeared



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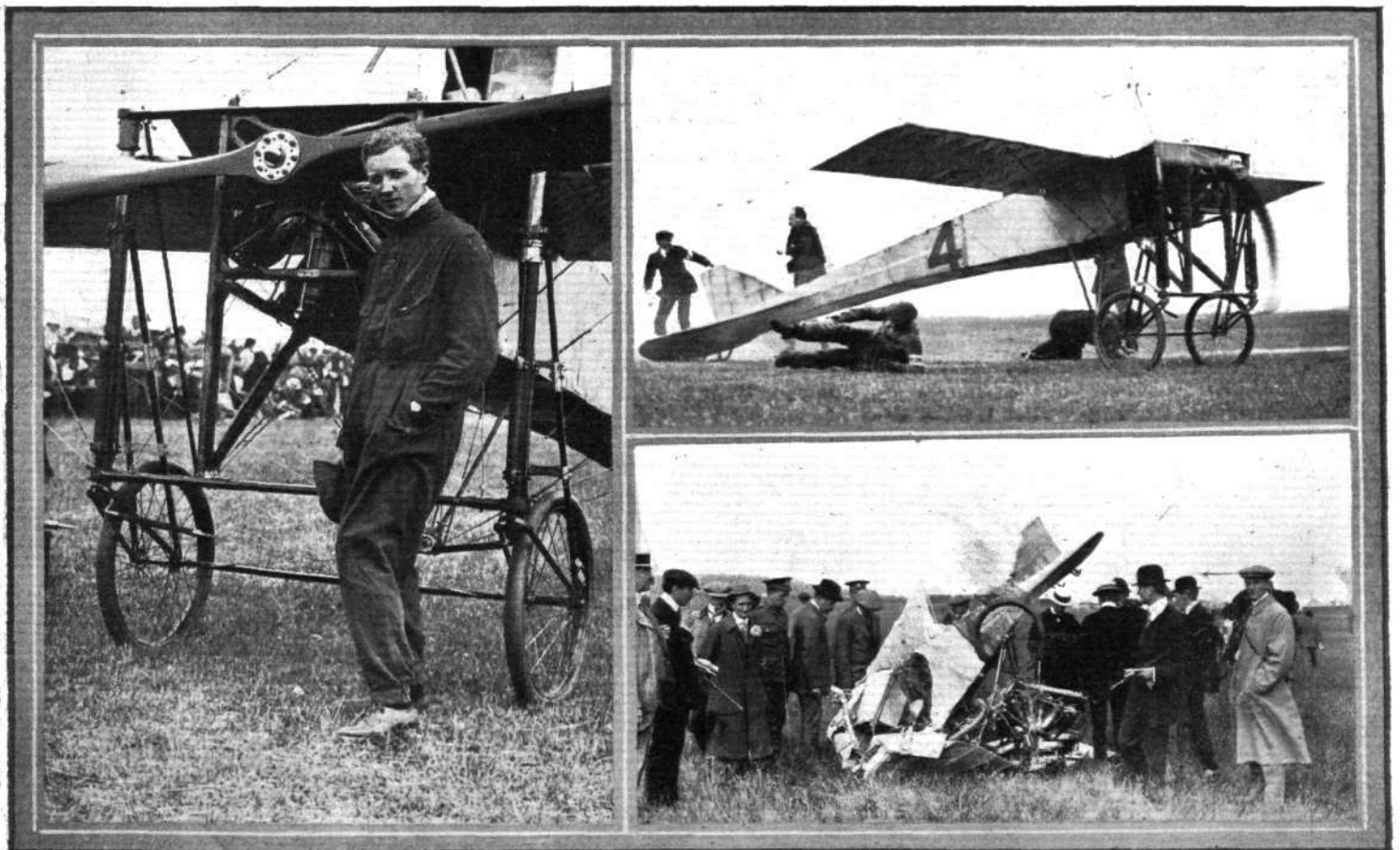
GORDON-BENNETT RACE AT EASTCHURCH.—Mr. Alec Ogilvie's N.E.C.-engined "Baby" Wright fills up with petrol. Above, Mr. Ogilvie is seen in his steady flight round the course.

that after passing the first mark tower somewhat too sharply Hamel, in endeavouring to get round to the direct course a little too speedily, was unable to recover the normal position, and, to the alarm of the whole of the onlookers, came crashing to earth some 150 ft. beyond the mark tower. With such terrific force and at such a pace did his machine strike the earth that the engine, still revolving, bounded along for some 20 yards, carrying and breaking up the machine on its way. By providential luck, when it came to final rest Hamel was thrown clear some 14 ft. ahead of the tangled wreckage. This mishap was the only regret of the day, and it was with the greatest relief that those who were almost immediately on the spot realised that, beyond a severe shaking and bruises, this splendid aviator did not appear to be seriously the worse for his smash. Within two or three minutes he had actually risen to his feet almost by himself and was speaking. Within a few minutes further he was carried away by the ambulance corps to rest and recover from the shock in a more congenial place than the open field.



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SOME OFFICIALS AT THE GORDON-BENNETT RACE, EASTCHURCH.—From right to left: Mr. Mervyn O'Gorman, Colonel Holden, Mr. Roger Wallace, K.C., Mr. Mortimer Singer.



GORDON-BENNETT RACE AT EASTCHURCH.—Mr. Gustav Hamel and his 100-h.p. Blériot just before his start in the race. On the right he is just away, to be brought down, however, after three-quarters of a minute, after rounding the first mark tower, as seen in the wreckage below. Note the rolling method of the assistants in clearing the machine at the moment of starting.

Hamel's start was made some ten minutes before three o'clock, and at three o'clock Chevalier, one of the French champions, took the air on one of the Nieuports—No. 12. He continued round and round, circuit after circuit, his time varying between 3 and 4 mins. approximately for the full circuit of 6 kiloms. (3.728 miles) and although his motor appeared to be working at times indifferently, he kept up for eleven full rounds and was just completing the twelfth circuit at 3.45 when he came down a quarter of a mile before the starting-line, breaking the under-carriage and wheels in the landing. It was curious to notice that Chevalier's machine, when passing over the starting-line, as seen from the first mark tower, seemed to make a curious little curtsey every circuit.

Barely 3 minutes before No. 12 was put out of the running, Weymann on the 100-h.p. Gnome-engined Nieuport took his turn across the starting line, and the difference in speed was instantly noticeable. During no round did he exceed the 3 minutes, and several were got over at much faster speeds, so that by the time he had finished at about 4 minutes to 5, it was confidently forecasted that the winner was already found in Weymann with his 1h. 11m. 36s. for the 150 kilometres course. Not content with completing the course, he continued on for several laps beyond until five minutes past the hour, when he narrowed his circles to within the mark towers, and ultimately came down gracefully side by side with Nieuport's machine, No. 11, which was standing beyond the members' enclosure ready for its turn.

Chevalier in the meantime, at 4.40, had determined to take over another machine, and he accordingly once more rose over the course, but fared even worse than on his first mount, as within a couple of minutes he by some curious coincidence came down in the same field, and within 500 yards of the same spot where he had been compelled to land with his first machine. He was thus put completely out of the running. Just before 4.30 Alec. Ogilvie brought out the "Baby" Wright from its shed, and, losing no time, was soon up to the starting point, and away by 4.37. The new note in the "music" of the two Wright propellers, and the fact that the machine was a biplane, created fresh interest amongst the public, and as she steadily kept round on her course at a fine speed of over 54 miles an hour, considerable excitement was kept up by the overlapping of the slower machine by Weymann's Nieuport, and later by Leblanc's Blériot and Nieuport's No. 11. After twenty laps on the "Baby" Wright, Ogilvie descended for petrol, but was soon away again, and finished the 94 miles in 1h. 49m. 10s., giving an

average speed, including the time for replenishment, of 51.31 m.p.h. Although he was second to finish the full course, before his landing both Leblanc, on No. 5 Blériot, and Nieuport, on his No. 11 monoplane, were putting in times almost equal to Weymann's, lap by lap, and it was evident that except for some unforeseen mishap Great Britain's chances of being high up in the final list were very remote, with Hamel and his racing Blériot wiped out.

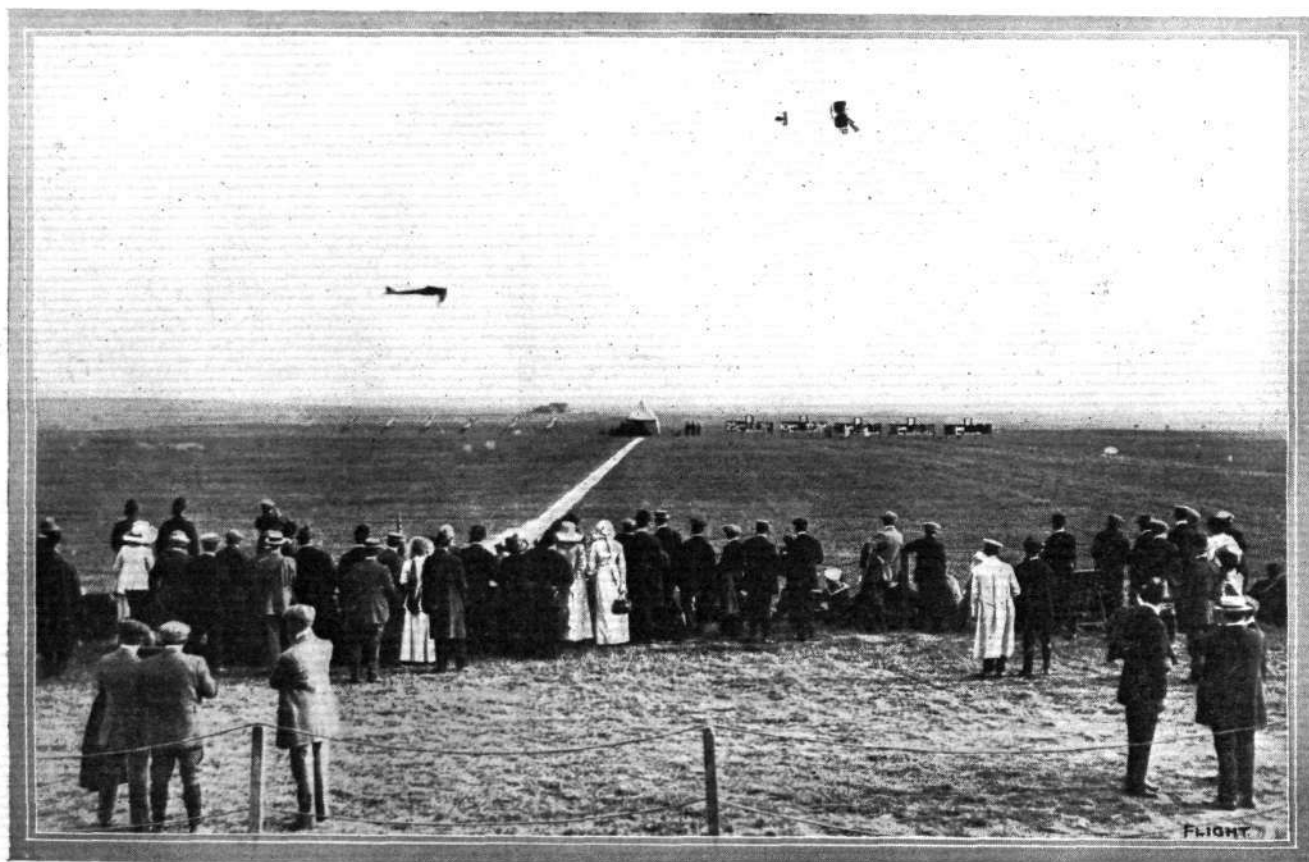
M. Nieuport was in the air a quarter of an hour before M. Leblanc took up the running, at that time the three machines circling the aerodrome together, engendered keen excitement amongst the crowd. Leblanc at first appeared to be flying nearly 4 m.p.h. slower than Weymann had got out of his Nieuport, but with the engine running better and better he gradually increased his average speed rather than the other way, thereby raising hopes, doomed to disappointment, amongst the supporters of France. No doubt having learned his lesson from the mishap to Hamel, Leblanc was sufficiently cautious to take a wider sweep round the mark towers, as in like manner to Hamel's machine, M. Blériot had cut down the span on his monoplane if anything to a greater extent. It was curious that Weymann also, after the first few rounds, had bettered his speed in the race.

Nieuport's average speed ultimately worked out at over 75 m.p.h., whilst Leblanc, who finished at seven, was, as already stated, only a matter of two minutes longer than Weymann with the winning Nieuport.

The heartiest congratulations were accorded to the American champion from both the French and British competitors, whilst rounds of cheering from the general public gave evidence once more of the true sporting instinct inherent in any cosmopolitan gathering of this nature.

After racing was over, an informal dinner took place in a marquee on the grounds, at which the competitors were entertained by the Royal Aero Club, and the Cup presented to Mr. Weymann.

Both before the racing had commenced and after seven o'clock Mr. Graham Gilmour, who, unfortunately, had not been able to get his fast machine ready in time, gave some excellent exhibition flights on the Bristol biplane, at one time passing away with a passenger for a long turn round the end of the course and then flying well away towards Sheerness. Little episodes of this character greatly helped towards the satisfaction and the enjoyment of the thousands who had travelled thus far and had courageously ventured on so onerous a journey on the Chatham and Dover Railway.



GORDON-BENNETT RACE AT EASTCHURCH.—The starting line which the competitors had to cross in flight, as seen from the Press enclosure. At the other end of the line is the Judges' box, and right and left the scoring boards and public announcements. In the air above Mr. Alec Ogilvie is seen on his N.E.C.-engined "Baby" Wright, and below, Weymann, the winner, on his Nieuport monoplane.

The greatest praise must be accorded to the admirable arrangements which were carried out at the flying grounds from first to last under the auspices of the Royal Aero Club, with Mr. Harold E. Perrin, the indefatigable secretary, guiding operations in every direction.

The committee and stewards, starters and timekeepers, all worked with the heartiest enthusiasm, and to these must be given the credit for the great success which attended the meeting, in view of the unexpected large gathering which came together in pursuit of the new sport.

GORDON-BENNETT COMPETITION.—Table of Cumulative Lap Times.

Pilot.	Country.	Machine.	Engine.	Average speed.	1 lap=	2 laps=	3 laps=	4 laps=	5 laps=	6 laps=	7 laps=	8 laps=	9 laps=	10 laps=
					6 kils.	12 kils.	18 kils.	24 kils.	30 kils.	36 kils.	42 kils.	48 kils.	54 kils.	60 kils.
			h.p.	m.p.h.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.
C. Weymann.	U.S.A.	Nieuport	100Gnome	78	2 50	5 37	8 26½	11 17	14 7½	16 57½	19 49	22 40	25 30½	28 21½
A. Leblanc ...	France	Blériot	100Gnome	75·83	3 3½	5 59½	8 57	11 53½	14 49½	17 44½	20 40½	23 35½	26 31½	29 29½
E. Nieuport	France	Nieuport	70Gnome	75·07	2 58½	5 55	8 42	11 49½	14 46	17 41½	20 37½	23 33	26 32½	29 32½
A. Ogilvie ...	Great Britain	Wright	50N.E.C.	51·31	4 32½	8 54½	13 12½	17 27½	21 43½	25 53½	30 9	34 28½	38 41	42 53
M. Chevalier	France	Nieuport	28Nieuport	—	3 14	7 11½	10 49½	14 29½	19 7½	22 4½	25 52½	29 39½	33 22½	37 56½
G. Hamel ...	Great Britain	Blériot	100Gnome	—	—	—	—	—	—	—	—	—	—	—

Pilot.	11 laps=	12 laps=	13 laps=	14 laps=	15 laps=	16 laps=	17 laps=	18 laps=	19 laps=	20 laps=	21 laps=	22 laps=	23 laps=	24 laps=	25 laps=
	66 kils.	72 kils.	78 kils.	84 kils.	90 kils.	96 kils.	102 kils.	108 kils.	114 kils.	120 kils.	126 kils.	132 kils.	138 kils.	144 kils.	150 kils.
	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.	m. s.
Weymann	31 12½	34 11½	37 4½	39 57½	42 51	45 43½	48 35½	51 28½	54 23½	57 17	60 12½	63 6½	65 57½	68 47½	71 36½
Leblanc ...	32 25	35 23½	38 24½	41 24½	44 3½	47 21	50 18½	53 14½	56 9	59 6	61 59½	64 55½	67 50	70 45	73 40½
Nieuport	32 29½	35 28	38 25½	41 27½	44 27½	47 30	50 30½	53 32½	56 56	59 39½	62 40	65 39½	68 39½	71 39	74 37½
Ogilvie ...	47 5½	51 15½	55 23½	59 29	63 36	67 41½	71 44½	75 47	79 57½	84 4½	88 10	92 20*	100 41	104 53½	109 10½
Chevalier	50 53½														
Hamel ...															

* Stop.



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GORDON-BENNETT RACE AT EASTCHURCH.—A number of well-known pioneers and supporters of aviation watching the race near the starting line on Saturday.

THE CONQUEST OF THE AIR. A Song of the Winds.

Wind from the Realms of Silence,
Lord of the Frozen North,
Back in the far dim ages
You sent your challenge forth.
Your ice-strewn seas are vanquished,
Your endless wastes of snow,
And soon your aerial kingdom
Victorious man shall know.
Wind from the scorching desert
And trackless forest zone,
Foul swamps where death lies lurking
To claim man for his own.
Unheeding of the perils,
Man forced a highway through,
And soon his planes shall hover
In your unconquered blue.

Wind from the broad Atlantic,
Whose mighty billows roar,
And thunder their defiance
Along our Western shore.
What though your waves may scatter
Our vessels on the Main,
Man seeks a new dominion,
His ship the Aeroplane.
Wind from the North Sea reaches,
Wind of the frost and gales,
Whose rude breath swept the Goodwins
And filled the Vikings' sails.
Your lofty throne is shaken,
Full soon shall you declare
Man's last and greatest triumph,
The conquest of the air.

DOROTHY M. HAWARD.

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

Committee Meeting.

A MEETING of the Committee was held on Tuesday, the 4th inst., when there were present:—Mr. R. W. Wallace, K.C., in the Chair, Mr. Griffith Brewer, Mr. Ernest C. Bucknall, Prof. A. K. Huntington, Mr. J. T. C. Moore-Brabazon, Mr. C. F. Pollock, and Harold E. Perrin, Secretary.

New Member.—The following new Member was elected:—Theodore D. Morison.

Aviators' Certificates.—The following Aviators' Certificates were granted:—

100. Charles Gordon Bell.
101. Charles Reginald Abbott.
102. William Miller Hilliard (subject to sanction of the Aero Club of America).
103. William Darnley Johnstone.

Aeronaut's Certificate.—The following Aeronaut's Certificate was granted:—

15. A. Preston Hohler.

Gordon-Bennett Aviation Cup.—The following times were confirmed:—

			H.	M.	S.
1. America ...	C. T. Weymann	...	1	11	36½
2. France ...	A. Leblanc	...	1	13	40½
3. France ...	E. Nieuport	...	1	14	37½
4. Great Britain ...	A. Ogilvie	...	1	49	10½

The following Resolutions were unanimously passed:—

That the best thanks of the Royal Aero Club be accorded to Mr. Alec Ogilvie for his services as representative of Great Britain in the contest for the Gordon-Bennett Aviation Cup.

It is of interest to note that Mr. Alec Ogilvie is the only aviator who has, on two occasions, completed the entire course in contests for the Gordon-Bennett Aviation Cup. At Eastchurch, on Saturday last, Mr. Ogilvie used an N.E.C. engine of all-British construction.

That the Royal Aero Club, in thanking Mr. Gustav Hamel for representing Great Britain in the contest for the Gordon-Bennett Aviation Cup, desires to sympathise with him in the unfortunate accident which robbed him of his chances in that event, and, further, expresses its gratification at learning that the injury sustained has not proved serious.

The Secretary was instructed to send a letter of thanks to Dr. T. R. Wigglesworth, of Minster, for his kind services as Medical Officer on the occasion of the contest at Eastchurch.

In response to a cablegram congratulating the Aero Club of America on their victory, the following reply was received:—

"New York, July 4th, 1911.

"Thanks. Look forward greeting English challengers next year.

"AERO CLUB OF AMERICA."

A full report of the race appears elsewhere in this issue.

"Daily Mail" Second £10,000 Prize.

Thirty-two competitors now remain in for the above contest, and a full list, together with particulars of the aeroplanes to be used, will be published next week.

Brooklands.—The start will be made from Brooklands on Saturday, July 22nd, 1911, at 3 p.m.

Members of the Royal Aero Club will be admitted free to Brooklands both at the start and finish on production of their membership cards.



PROGRESS OF FLIGHT

Kite and Model Aeroplane Assoc. (27, VICTORY RD., WIMBLEDON)

THIS Association held a Model Steering Competition on July 1st at the East London College garden party at the Drapers' Company's Ground, Leyton, the prizes being antimony rose bowls, given by the Aeronautical Research Society of the College.

It was a very successful competition, although the wind was gusty and troublesome and severely tested the capabilities of the models.

The result was: Mr. J. McBirnie, of Tottenham, 1st, with 120 points; Mr. H. R. Weston, Cambridge Heath, 2nd, with 110; Mr. C. Owen, of Barnes, 3rd, with 105 points.

Mrs. Akehurst, in presenting the prizes, congratulated the winners upon their flights.

Mr. Akehurst, on behalf of the Association, proposed a vote of thanks to the Chairman of the Aeronautical Research Society for having provided such grand prizes for competition, and at the same

Hendon.—The first stop is at Hendon, and the competitors will arrive there from about 3.30 p.m. on Saturday, July 22nd.

The aeroplanes will remain at Hendon on Sunday, July 23rd, and the start from Hendon to Harrogate will be made at 4 a.m. on Monday, July 24th.

Members will be admitted free to the Hendon Aerodrome on these three dates on production of their membership cards.

Members having motor cars, and wishing to assist in the carrying out of the arrangements, are requested to send in their names to the Secretary of the Club.

Balloon Race at Hurlingham.

The long-distance balloon race for the Hedges Butler Challenge Cup will take place at the Hurlingham Club, Fulham, S.W., on Saturday, 15th inst.

The entries for this competition will close on Tuesday next, the 11th inst., at 12 o'clock noon. The entrance fee is 10s.

Members of the Royal Aero Club will be admitted to the Hurlingham Club free, on presentation of their Royal Aero Club membership cards.

The Manville £500 Prize.

The seventh date for this competition is on Saturday, the 15th inst. The flights so far recorded are by C. Howard Pixton (111 minutes) and S. F. Cody (80 minutes).

Aviation in Valencia, Spain.

The following letter has been received from the Consulate-General of Spain:—

"In connection with the annual July fêtes, the Corporation of this city proposes to hold an aviation meeting on the 28th and 29th of July next, open to airmen of all nationalities. A flight will be organised from Valencia to Alicante and back to Valencia, a distance along the sea coast of about 300 kiloms., and prizes will be awarded of, at least (1st) ptas. 25,000 (£1,000); (2nd) ptas. 10,000 (£400), and also several others of about ptas. 3,000 (£120) each. I am desirous by the organising committee to state that a hearty welcome will be extended to British aviators desirous of taking part.

"The Corporation will be willing to defray the freight on any aeroplanes from the United Kingdom, to arrange for non-levying of Customs dues, and also to furnish all aviators with free railway tickets to Valencia to attend the meeting.

"The latter will be under the auspices of the Real Aerea Club de Espana, and the Spanish Government has intimated its readiness to furnish a torpedo boat or boats to convoy the aeroplanes along the coast route.

"I am desirous by the Corporation to ask that you will kindly take the necessary steps to make this aviation meeting known to all interested in this sport in Great Britain.

"All inquiries received by the Aviation Committee, Ayuntamiento de Valencia, Valencia, will receive speedy replies."

Mr. Gustav Hamel.

Members will be delighted to hear that Mr. Gustav Hamel, who met with an accident on Saturday last, at Eastchurch, is progressing favourably, and was able to leave Minster for London on Monday last.

HAROLD E. PERRIN,
Secretary.

166, Piccadilly.



ABOUT THE COUNTRY.

time thanked them for having asked the Association to hold this competition. Mr. Pringuer seconded.

Professor D. A. Low proposed a vote of thanks to the Association for having organised the competition, and to Mr. Akehurst for the excellent arrangements made.

Mr. Akehurst replied and hoped that on the next occasion he would be able to arrange a more scientific competition.

International Model Competition.—The Royal Aero Club have granted the Council the necessary permission to hold an International model competition in this country.

The rules and details of this competition will be published as soon as possible, but some time must elapse before the date, &c., can be fixed.

A special fund for prizes for this competition has been opened and Mr. Akehurst will be pleased to receive donations towards this.

FROM THE BRITISH FLYING GROUNDS.

Royal Aero Club Flying Ground, Eastchurch.

AFTER the stirring events of last Saturday, which drew the attention of the civilised world to Eastchurch, and surely stamped it as unsurpassed as a flying ground in Great Britain, it is interesting to note that less than two years ago this magnificent flying ground was practically unknown. In that condition it might have remained to this day had it not been for the energy and foresight of Mr. Frank McClean, who, at that time a keen amateur aviator practising at the Leysdown Aerodrome, got to hear of the ground, and recognising what an ideal place it would be for those learning flying, promptly purchased same, and placed it at the disposal of the Aero Club of the United Kingdom—now the Royal Aero Club.

The actual "discoverers" of the site were Messrs. Horace and Eustace Short, who, finding that the Leysdown Aerodrome, where they had erected a pioneer aeroplane factory, was rapidly becoming inaccessible owing to the bad state of the roads, began to explore the island in search of more suitable ground. After traversing the whole of the island in an ancient 7-h.p. Panhard car, whose distinctive feature was its ability to negotiate dykes and marshes, they finally discovered the large flat stretch of unbroken country which is now known as the Eastchurch Aerodrome.

The pioneers at Leysdown were not long in making up their minds to migrate to the new ground, and within a few months of its discovery nearly all the sheds at Leysdown had been pulled down and re-erected at Eastchurch, most of the aviators flying their machines over to the new ground.

The aerodrome was soon in a thriving condition, and many good flights were being made at a time when few all-English machines were in existence.

The doings at Eastchurch, however, have never been so well "pushed" as those taking place at some of the other English flying grounds, which, being situated in more populous districts, are more accessible to the able pens of the newspaper reporters.

Recently, the advent of the Naval officers, of Mr. Alec Ogilvie, and the interesting experiments of Lieut. Dunne, have drawn more attention to the place.

It is only regrettable that Mr. McClean's absence on a scientific expedition prevented his being present to witness the "blue riband" of the air being contested for over the ground which his foresight and energy opened up to his fellow aviators.

Apart from the Gordon-Bennett Race, which is fully reported elsewhere, little flying was done during the week, mainly owing to the unsettled weather conditions, which at one time threatened to interfere with the great race itself.

On Monday Lieuts. Samson, Gerrard, Longmore and Gregory were all flying for several hours in the morning, and in the evening Lieut. Samson and Lieut. Gerrard flew on their Short biplanes to Dover and back. Starting from Eastchurch at 5 p.m. they both rose rapidly to a height of some 2,000 ft., and then headed a true course to Dover, flying in a head wind, which, at that height, was blowing 20 m.p.h. They experienced no difficulty in finding the Aviation Camp at Dover, and both landed very neatly in the rather cramped enclosure formed by the circle of tents. After being most cordially received and entertained to a light repast by the aviation colony they returned to Eastchurch, being assisted at the start by the able French mechanics, who, by the way, expressed astonishment at the rapidity with which the English machines ascended and at the high speed for a biplane type of machine.

On their arrival Lieut. Gregory took up the machine which Lieut. Gerrard had been flying and made a long tour of the island, returning just as it was growing dusk.

Brooklands Aerodrome.

Avro School.—The chief item of news is that the Avro biplane of the Curtiss type has been doing very well in the hands of Mr. Raynham, several circuits of the ground being made at a height of 60 to 100 feet. It will shortly be fitted with hydroplanes for experimenting over water. Mr. R. C. Kemp has been away to Manchester to inspect the Avro biplane which is being built for him for the *Daily Mail* competition. It is hoped that this will make its appearance at Brooklands in about a week. The engine is to be a 60-80-h.p. E.N.V., so that the machine will be all-British.

Freshfield Aerodrome, near Liverpool.

MR. GERALD HIGGINBOTHAM, of Macclesfield, received his pilot's certificate from the Royal Aero Club on Saturday last, having gone through the test on his 50-h.p. Gnome-engined biplane. He showed consummate skill, especially when taking the right hand turns.

Mr. Higginbotham has this week departed on a tour through Switzerland and France, and he will therefore not be doing any flying again for about a month.

Mr. King hopes to complete the repairs to his machine this week and again be in the air.

Lanark Aerodrome.

VERY little flying has been done at this school during the past week, owing to high winds and rain, the wind seldom blowing less than 20 m.p.h. even in the evenings. Only on Thursday evening did the wind moderate sufficiently to allow Mr. Ewen to take the school Blériot out. Mr. Ewen was booked to give exhibition flights at Haddington on Saturday, July 1st. The previous day the machine arrived and was assembled, and on the Saturday morning Mr. Ewen made a short flight.

Although the wind was very gusty in the afternoon, the pilot decided to attempt a flight, and taking his seat in the machine was soon flying along the exhibition ground.

Ascending steadily, he then made for the river Tyne, and when half-way over the river it was noticed he was in difficulties, for the machine seemed to take a direct lift of over 10 ft. immediately after being tilted over to the right. This the pilot very smartly rectified by turning sharply to the left. On reaching the opposite bank, he found the wind so strong that he was forced to descend, but unfortunately, another gust caught him on the left wing, and dashed the machine to the ground, when it turned turtle, pinning the pilot beneath. The crowd immediately burst through the barriers and rushed to the river bank, but their fears were soon set at rest when they saw Mr. Ewen extricated from the machine apparently not much hurt. Many willing hands were ready to help, and the machine was quickly dismantled and conveyed back to its hangar, the river being crossed by rafts.

London Aerodrome, Collindale Avenue, Hendon.

Grahame-White School.—On Wednesday morning last week the conditions for flying were fairly good, and Hubert was fully engaged at instruction work. Driver, a pupil hailing from South Africa, whose progress has been very rapid and consistent, flew the school Farman for many single circuits with the object of getting proficient at the art of landing well. Davies also was receiving tuition in the form of passenger flights, while later on he did some rolling. The following day was so blustery that flying could not be ventured upon until very late in the evening, and even then, with the wind averaging 25 miles an hour, things were none too pleasant. It was almost dark when Paterson wheeled out the Grahame-White "Baby," and in his short flight of five circuits he proved conclusively the high stability qualities of this remarkable little model, and incidentally his total disregard of adverse conditions.

Since the "Baby" has been cured of her original propeller trouble



Lieut. Pepper, R.G.A., one of the Bristol pupils at Salisbury Plain, who passed for his Royal Aero Club certificate last week.

the machine has more than satisfied the expectations of her designer. By virtue of her speed, which is somewhere between 60 and 65 miles an hour, she is apparently oblivious to wind gustiness, while she is possessed of a remarkable "vif" in the matter of "get off" and climbing.

Nothing occurred on Friday on account of the wind, which was persistent between 20 and 30 miles an hour. Saturday was more favourable, and tuition commenced early in the morning. Hubert flew for a circuit or two to test the machine, and then gave passenger flights to the pupils. Driver made several laps, and Davies did some rolling. There was an unmistakable air of loneliness during the afternoon and evening at the aerodrome, as all the aviators, with the exception of Hubert, had departed for the Gordon-Bennett Race at Eastchurch. However, he made up for their absence by some really good work on the school Farman. Several passenger flights were given. Later on he climbed to a height of 2,000 ft., and circled the neighbourhood, alighting by a long glide from that height. One could see his propeller come to rest while he was yet about 1,000 ft. up.

No flight was made on Sunday until the evening, when Compton Paterson went out for a long flight on the "Baby." Circling until he had risen to 1,000 ft., he left the boundaries of the aerodrome and made a wide circle towards Cricklewood. Passing over Golders Green and Mill Hill he turned back towards the aerodrome and descended with a long *vol plané*.

Monday was a day of intense excitement owing to the arrival of the competitors in the Circuit of Europe. Soon after the arrival of Vedrines, when the wind was blowing somewhere in the vicinity of 30 miles an hour, Paterson went out on the "Baby" and made a most exciting flight of a quarter of an hour's duration.

During the delay between the arrivals of Beaumont and Garros, Mr. Grahame-White made a characteristic exhibition flight on the same machine, banking heavily on both right and left handed turns, and flying along the front of the enclosures at a colossal speed.

Clement Greswell flew the "Baby" a little later and made an excellent show, although he has only flown this machine once previously and that several months ago. Throughout the afternoon Grahame-White, Paterson and Greswell gave many exhibitions on the Grahame-White biplane, while Hubert was busy with the school "bus." Paterson and Hubert did a good deal of passenger carrying, the former taking 13 passengers one after another, and making several flights three up on the military Farman. Hubert's score was 11, and among those he carried was his friend Gibert, the R.E.P. flyer, who was for some time *mecanicien* to Mr. Grahame-White while he had his first aviation school running at Pau, South of France. Tuesday was another good day. Greswell was out first on the "Baby" soon after 11 o'clock, and made a pretty flight of several laps. Paterson came out later, and flew very trickily, introducing many of the "stunts" he has apparently picked up since he settled at Hendon. Just before tea-time he started out on a long flight for the purpose of testing the capacity of the "Baby's" fuel tank. He kept at a height of 2,500 ft. for an hour and a half, flying in

circles of about four miles in diameter until his supply was exhausted. He descended *en spirale*, his *vol plané* lasting something like two minutes. Hubert then made several circuits on the school "bus," following which Paterson made several flights on the military machine with passengers.

Salisbury Plain.

ON Wednesday, Thursday and Friday of last week the aviators were storm-bound and work had to be confined to the hangars. On Wednesday afternoon Major Bannerman, having arrived from Farnborough, the other officers of the Air Battalion paid a visit to the Bristol hangars and inspected a military machine fitted with a Renault engine. Much to the delight of the pupils the weather changed during Friday, and the Bristol School was soon hard at work. Messrs. Pizey, Jullerot and Fleming took up pupils for flights. Col. Smeaton, R.G.A., made a circuit of the ground and Capt. Fulton carried up a lady passenger. At 2 o'clock on Saturday morning Messrs. Pizey and Fleming were on the ground overhauling a machine, and at half-past three started off to fly to Eastchurch. They called at Brooklands for half an hour on the way, and after the pilots had changed places continued their journey. The strong winds in the neighbourhood of Rochester brought them down there, and they completed the journey to Eastchurch by motor car. During Saturday morning the Officers of the Air Battalion were out, Capt. Fulton and Lieut Conner putting in a deal of scouting practice while in the Bristol sheds the work of erecting the monoplane with a 50-h.p. Gnome engine was proceeded with. Both on Sunday and Monday the Air Battalion Officers were at work, and Capt. Fulton made a good flight on the extension biplane in a very strong wind. Capt. Burke's Farman has been returned from Oxford, and is now ready for the air again. Another Australian pupil, Mr. Watts, has joined the School, and although his time is very limited, the Bristol instructors have every confidence that he will qualify before he returns to Australia. In the evening, Capt. Fulton, Burke, and Massy, and Lieut. Conner were all in the air indulging in scouting practice. The new Bristol monoplane was brought out for the first time, and, with M. Prier in charge, made a very fine flight of 55 minutes, during which a height of over 1,600 feet was reached. M. Prier made a beautiful landing by means of a *vol plané*, and explained that he had only come down owing to the petrol supply getting very low. The machine behaved very well, and appeared to be extremely fast. On Tuesday the Air Battalion Officers put in a good deal of practice, and Captain Massy was flying for half an hour. M. Tetard has now returned to Salisbury.

Southport Aerodrome.

ON the 3rd inst., after a week's enforced idleness due to squally weather, the Dines anemometer fell to 19 m.p.h., and Mr. Gaunt took out the "Baby" biplane he has made for a straight 2-mile trip, which subsequently he repeated, descending with a neat *vol plané*. Owing to some mischievous tampering by the crowd, half the elevator got bent 6 ins. out of normal, and Mr. Gaunt had a narrow escape on his next attempt, the machine quickly turning over, landing on the wing tip; but this fortunately held together, and so saved a smash.

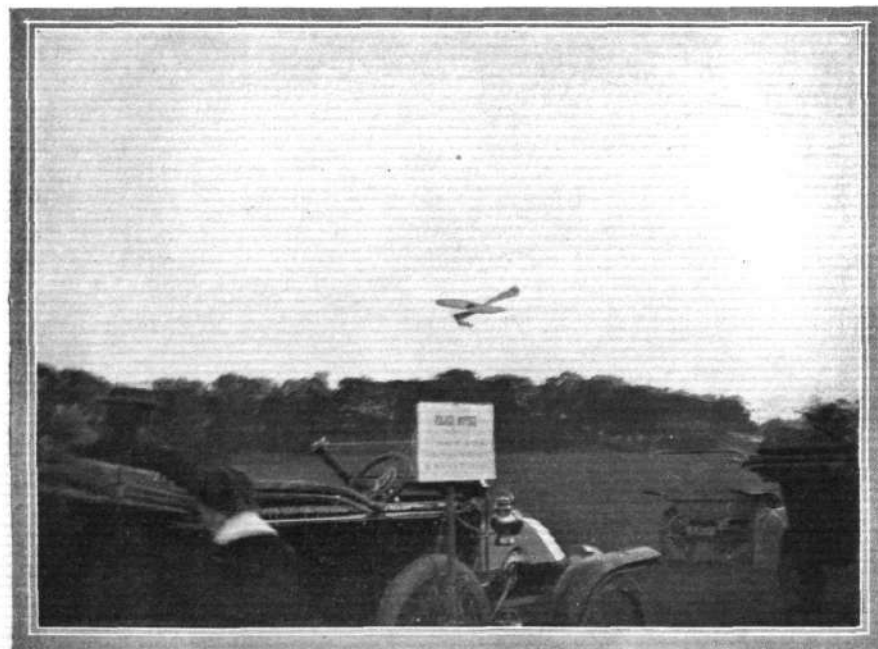
On the 4th, Mr. Gaunt made several trial flights in the evening, after altering the adjustable incidence of planes to do slow flights, and covered over 10 miles with remarkable steadiness in the 12 m.p.h. wind.



THE NEW ARMY BIPLANE.

THE Army aeroplane to which we recently referred has several times lately been out for short trips under the pilotage of Mr. De Havilland, but so far has managed nothing better than straight trips up and down Laffan's Plain, no turns being attempted.

The machine has been altered by the removal of the small pivoted shoes at the rear of the main skids and instead a large single skid (pivoted and spring controlled) has been fixed up forward nearly under the elevator, as there was a distinct tendency for the machine to come down somewhat heavily forward. The outriggers carrying the rudders have been considerably shortened, and at present only a single seat is fitted. The main dimensions are:—Elevator, 16 ft. effective span by 4 ft. 6 in. chord; top main plane, 38 ft. span by 6 ft. chord; lower main plane, 36 ft. span by 6 ft. chord; propeller 10 ft. 6 in. diameter; speed, 800 r.p.m.; 8 struts only between main planes; gap of main planes about 6 ft.



AT THE LIVERPOOL POLO GROUND.—A *vol plané* by Mr. H. G. Melly on his Blériot.

"VALKYRIES" AND THE GOVERNMENT.

WITH remarkable generosity Mr. H. Barber, in his presentation to the British nation of four of his military monoplanes, has, in a practical way, come to the rescue of the British nation in making it possible for practical work now to proceed in the Navy in addition to the very circumscribed work which is at present being carried on by the Army. Nothing but contempt can be felt by Britishers in general at the state of things which at present exists in connection with the grant of funds by the Government for the purpose of placing our Army and Navy upon equal footing with aerial weapons of offence with other nations; a state of things which throws the executive upon the "charity" of such patriotic men as Mr. Barber and a host of officers who have expended time and their own cash in large amounts. By this means they have provided what in any other country would unhesitatingly have been voted to ensure the position which a first-class nation like Great Britain should maintain without possibility of challenge. Mr. Barber is a scientific enthusiast, who for the past two and a half years has been to great expense in designing and experimenting with aeroplanes, with the result that his Valkyrie military machine has been evolved. Not the slightest official recognition has been given to him during all his labours, and although the admirable work which he has carried through and the complete success with which he has established the efficiency of his monoplane, especially for military purposes, has been common knowledge, an opportunity has not even been given him to demonstrate the capabilities of his machines to the higher military officials. It is to men like Mr. Barber, who help forward the British industry by designing and constructing entirely British machines, that special credit and recognition should be given. When one sees the titles and honours which are showered upon absolute nonentities, and in many cases worse, for the purpose of serving very questionable political ends, it gives one to think very strongly as to whether it is not time that a revision should be brought about in the methods of deciding as to who should be honoured (?) in the distribution of such empty honours which many of the best men think it better to be without.

It is to be hoped that in the gift of these four Valkyries such practical work will be immediately forthcoming that even our close-fisted Government may be induced to see the error of their ways and be a little more generous in acquiring machines, especially of British construction, which will help towards obtaining for Great Britain the supremacy of the air even as she now holds the command of the sea.

The machines presented by Mr. Barber are as follows:—

1. One Valkyrie military monoplane fitted with 30-h.p. Green engine. Carries one person. Speed 45 miles per hour. Built especially strong, and particularly adapted for the use of beginners. In flying order.

2. One Valkyrie military monoplane, to carry pilot and passenger (or two light passengers). Fitted with 60-80-h.p. Green engine. Speed 40-50 miles per hour. Especially suitable for pupil passenger work. In flying order.

3. One Valkyrie military monoplane, to carry one person. Latest design of this type. Fitted with 40-50-h.p. Green engine. Speed 45 miles per hour. In flying order.

4. One Valkyrie military monoplane. Latest passenger-carrying type. Built to carry a 50-h.p. Gnome engine. Speed 50-55 miles per hour. Just finished.

On Sunday evening, before handing over to the Government, the new 30-h.p. Green-engined model was taken straight off the stocks, and so standardised has the Valkyrie type become, that she straight away rose with ease in the air, Mr. Barber executing right and left-hand turns without a falter, being up for fifty minutes, and finishing with a fine *vol plané*.

In respect to the Gnome-engined machine trials have been made with this since its issue from the workshop, and on Monday not only did she give a good account of herself under Mr. Barber's solo guidance, but she also carried several passengers at heights varying from 1,000 to 2,000 ft., in one instance transporting a useful load of no less than 28 stone. These are facts which speak for themselves, and we must congratulate the services, especially the Navy, upon the acquisition of such fine specimens of British work.

Not only has Mr. Barber presented these machines to the British nation, but he has also offered his services as a designer, constructor and pilot to the Government as far as his time permits. Although no conditions were attached to the gift, he suggested that two machines might be allotted to the Navy, as they are particularly adapted to being fitted with combination floats and wheels to allow them to rise from or descend upon either land or water. This suggestion was, we understand, accepted, and two accordingly will be allotted to the Navy.

Mr. Barber, who is thirty-six years of age and of independent means, became imbued nearly three years ago with the idea that aviation was bound to become an indispensable factor in warfare, and since then he has devoted his entire time to inventing and constructing aeroplanes designed for naval and military purposes. For two years he built numerous machines, and carried out many costly experiments on Salisbury Plain, but lately his work has been transferred to Hendon. He has built twelve machines, and taught numerous men to fly, including several Army Officers. His work has cost him up to the present nearly £10,000. His latest Valkyrie type of military monoplane has the engine and propeller behind the pilot, thus securing an unobstructed view, whilst the under-carriage permits the machine to descend safely upon extremely rough ground. The machine is light, though strong, and can be folded up in a few minutes for transportation by road.

Mr. Barber intends to continue devoting his time to aeronautical research and experiments, and he is now commencing another and improved type of military monoplane in which his object is to secure automatic lateral stability equal to the longitudinal stability he has been so successful in finding. During the past six months Mr. Barber has made some attempt to augment his resources for carrying on such expensive work by entering the commercial field, but he intends to abandon this now as it encroaches too much upon his time; which he wishes to devote exclusively to research work and practical experiments connected with improved types of aerial craft. His company, the Aeronautical Syndicate, will, however, continue as before except that Mr. W. R. Prentice, who is a certificated pilot of the Royal Aero Club, will now take over the entire management.

BRITISH NOTES OF THE WEEK.

Graham Gilmour Circles St. Paul's.

ALTHOUGH at the present stage of aviation it is to be regretted that a flight over London, even if only a very small portion, should be attempted, it is impossible but to admire the feat performed by Mr. Graham Gilmour on a Bristol biplane on Wednesday evening last. In flying down the Thames to St. Paul's possibly there was little harm, and if he had omitted the circling of Sir Christopher Wren's noble pile he would have still scored heavily. However, as he followed with a similar exhibition round the Houses of Parliament, to the great admiration of the Members, it is possible his transgression in other respects may be lightly dealt with.

Mr. Grahame-White in Manxland.

ON Tuesday the Isle of Man had its first experience of aviation. At three o'clock, although the weather was gusty, Mr. Grahame-White had his Farman biplane brought out and made a circular flight, and later in the afternoon made two other trips. On Wednesday he was to have raced the steamer "Ben-my-Chree" round the Island, but after circling round the boat in the course of a quarter of an hour's flight, he returned to his starting point.

A Manchester Aerodrome.

AN aerodrome has now been started at Manchester, a suitable site having been found in Trafford Park, about five minutes from

Trafford Park Hotel, to which there is a car service. The area of the ground is about 91 acres, and it is rapidly being cleared and prepared for flying. The ground has been selected as the official alighting place for the competitors in the *Daily Mail* Prize Competition. The directors are prepared to let spaces on the ground for the purpose of erecting hangars to any flying men who wish to use the aerodrome. The address is 22, Booth Street, Manchester.

The Dunne Aeroplane.

IN our full-page drawing of the Dunne aeroplane which appeared last week, a draughtsman's error may be noticed in the plan form of the V wings, the tips of which are set 3 ft. too far back according to scale. It is unnecessary to publish a new drawing, as it would hardly be possible to detect any difference in the appearance, but we draw attention to the mistake in order to avoid confusion, although even this is not likely to occur, as the dimension is correctly given on the drawing, and it is, of course, a rule that dimensions, where given, always take precedence over the scale.

A Model Club for Macclesfield.

THERE are a good many enthusiastic model aeroplane makers and flyers in the neighbourhood of Macclesfield, and some have expressed a desire to form a club. All those interested in the proposal are asked to communicate with Mr. C. C. Horner, Blakelow, Macclesfield.

FOREIGN AVIATION NEWS.

Etampes to Orleans and Back.

MAKING the second test to qualify for his special military aviator's certificate, Capt. Felix, on a Blériot monoplane on the 29th ult., flew from Etampes to Orleans and back, covering the 108 kiloms. in 1 hr. 29 mins., his average height being 450 metres.

The Blériot School at Etampes.

SOME idea of the whole-hearted attention which the French Government is giving to aviation is to be seen in the new military school for instruction on Blériot monoplanes which has been opened at Etampes. It is under the charge of Lieut. Malherbe, assisted by Capt. Daveluy, Echeuin, and Felix, and six lieutenants. The 6 hangars on the ground at present house 14 machines, and no less than 24 officers are undergoing training at the school.

Paris Aviation Salon.

ARRANGEMENTS are now well in hand for the next Paris Aviation Show, which is to be held from December 8th to 25th. Applications for space will be received up to August 1st, and they should be sent to the Secretary of the Exhibition, at 61, Rue de Miromesnil, Paris.

Fatal Accident to French Officer.

THE great care necessary in training pupils was strongly emphasised at Bouy on the 30th ult. when a fatal accident occurred to one of the military pupils, Lieut. Trochon. He had been under instruction for some time, and had progressed so far as to be accorded permission to make his first solo flight. Everything appeared to go well until he reached the end of the practice field, when he was seen to be coming down with the motor still running. He then apparently tried to stop the motor, but in reaching for the lever moved the elevating lever, with the result that the machine came down suddenly, and the pilot being thrown out, he sustained such severe injuries to his head that he died later in the day at the hospital.

A Caudron School at Juvisy.

IN view of the increasing popularity of the Caudron biplanes, a proper school has now been organised at Juvisy and placed under the charge of L. Demazel. It was opened on the 28th ult., when Demazel made a good exhibition flight on the diminutive biplane, rising to a height of 500 metres and coming down by a *vol plané* from 300 ft., while two pupils, Micha and Akachew, also made short trips.

Damages for Late Delivery.

ON the ground that his machine was delivered so late as to render it impossible for him to compete for prizes in the Circuit de l'Est, Daillens has just succeeded in obtaining in the French Courts damages to the extent of 2,000 frs. from the manufacturers.

Belgian National Circuit.

ENTHUSIASM in Belgium regarding aviation has been greatly stirred by the passage through that country of the competitors in the European Circuit, and considerable interest is now being taken in the Belgian Circuit, which is to take place from the 5th to the 15th August. Up to the present seven entries have been received, including the two brothers Jean and Max Olieslagers and J. Tyck on Blériot machines, Vasseur on a machine of his own make, Crombez on a Debonignies aeroplane, and two Wright machines, for which the pilots have not yet been named.

A Spanish Circuit.

NOR to be behind the other countries of Europe, Spain is to have an aviation circuit, and the Aero Club of Spain is now busy organising a race from Valencia to Alicante and back, the competitors to stay at Alicante for one day. The distance is about 300 kiloms., and it is proposed to hold the event between July 20th and 29th. Three prizes are offered—£1,000, £400, and £200—and it is proposed to pay travelling expenses of competitors and their machines to the start.

A German Cross-Country Prize.

A SUM of £2,500 has been offered in Germany to be known as the Kathreiner prize for the first aviator to fly from Munich to Berlin landing on the way at Nuremburg and Leipzig. Apart from these two controls the aviator may only make one other landing and the maximum time of 36 hours is fixed for the journey. Hirth was the first to make an attempt on the 29th ult., but he only got a little

way on the journey when he was forced to land and returned to Munich in order to make a fresh start.

The Prize Won.

STARTING from Munich on a second attempt at twenty-five minutes past six on the 29th ult., Hirth, who was accompanied by a passenger, reached Nuremburg at half-past eight. He then determined to stay there the night, but was away again at twenty minutes past four in the morning, and reached Leipzig just before seven o'clock. He only indulged in a short rest, and started off once more at ten minutes to eight, and flying at a height of 850 metres flew direct to the Johannisthal ground, landing there at eight minutes past nine. The net flying time for the full distance of 330 miles between Munich and Berlin was 5 hrs. 41 mins., the last stage being somewhat slow as the aviator had great difficulty in fighting against a gusty south-west wind. The German-built Rumpler monoplane, however, proved equal to its task, and the 70-h.p. Mercedes motor, which was fitted, ran faultlessly.

The St. Petersburg-Moscow Race.

THE start of the aeroplane race from St. Petersburg to Moscow has been fixed for July 23rd, when the competitors will be sent off from the aerodrome at the Russian capital at two minute intervals. The race, it will be remembered, is confined to duly certificated aviators of Russian nationality and it will be closely watched by the military authorities, who will choose from the successful machines the types to be used by the Russian Army. The Minister of War has decided to purchase twenty aeroplanes at the conclusion of the race.

Flying over Niagara.

OF course it was inevitable that some daring and foolhardy aviator should flirt with death on an aeroplane above the rapids of Niagara, and no one can but deplore the ploy of it. Starting from a field about a mile below the falls, Lincoln Beachy on his biplane first flew over the falls, and then turning, dipped down and swooped under the upper steel bridge spanning the gorge, which at this point is about 100 ft. wide and 70 ft. high. Rising rapidly, he cleared the trees at the top of the gorge and landed on the Canadian side. It is hardly to be wondered at that the machine tipped and swayed in a perilous manner during the trip, and the spectators were greatly relieved when the exploit was over.

Flying among Skyscrapers.

A FEAT equally futile and useless was that performed by Harry Atwood on Saturday afternoon. On a Burgess-Wright machine, and accompanied by his mechanic, he flew on the previous day from Boston to New London, a distance of 135 miles, and then decided to go on to Governor's Island. Rising from his overnight resting-place at New London, he passed over New York, twice encircling the Singer building, forty stories high, and then passed on to the Statue of Liberty, which was encircled before finally coming to rest on Governor's Island.

AIRSHIP NEWS.

Siemens-Schuckert Airship to be Dismantled.

ACCORDING to advices from Berlin it would appear that the Siemens-Schuckert airship has fallen very far below the expectations of her designers and builders, and although she has made very few appearances in the open air, it is understood that she is to be dismantled. The reasons given are that, owing to constructional defects of the envelope, the vessel would not keep a straight course with the four propellers running at full power, and also that the arrangements of the three cars proved unsatisfactory.

"Clement-Bayard IV" Again Out for an Hour.

THE dirigible, "Clement Bayard IV," or "Adjutant Vincenot" as she will be called when taken over by the French Army, was out for a speed trial on the 29th ult. Cruising above the country round about La Motte Breuil and Compiègne with 14 persons on board, she was in the air for an hour, and attained a speed of 50 k.p.h.

Training on the Zodiac Vedette Airship.

AT St. Cyr on the 30th ult. the Vedette airship "Le Temps," built by the Zodiac firm, made its first ascent in charge of a military aeronaut. Count De la Vaulx was on board just to see that everything was all right, and in addition to the pilot—Col. Hirschauer—the passengers were Captains Bois and Patard and a mechanic. Both the ascent and the landing were carried out in perfect style.

EUROPEAN CIRCUIT.

WITH the near approach of the competitors to the stage which should include crossing the Channel the British interest in the European Circuit rose to a higher pitch, although at one time a *contreltemps* was feared, owing to the aviators being delayed in reaching Calais, so that the arrival in England would have clashed with the race for the Gordon-Bennett Cup. Happily, however, the possible deadlock was prevented by the date for the stage from Calais to London being postponed until Monday, when the eleven competitors who successfully crossed were given a rousing reception at Hendon and also at the various stages on their way to London. In our last issue we were able to chronicle the progress of the competition up to the arrival of nine of the competitors at Brussels on Tuesday. On Wednesday morning the people of Brussels were astir early in order to see the aviators start from the Berchem Flying Ground. Over night the number of arrivals at Brussels had been raised to a dozen by the arrival of Barra, Prevost, and Train, while Valentine had arrived with the intention of completing the final stages to London. The start was fixed for ten o'clock, and punctually to time "Beaumont" set off, followed two minutes later by Garros, while the other starters were Vidart, Vadrines, Gibert, Renaux, Kimmerling, Duval, Wynmalen, Prevost, Denysol, Valentine, and Train, the latter starting very late, at one o'clock. Wynmalen only went a short distance, returning to the Brussels aerodrome after half an hour's flight, while Denysol was only in the air for three minutes. Barra and Wynmalen were to have made their start at six o'clock in the afternoon, but decided to wait until next morning, when in company with Tabuteau they completed the stage. The first arrival at Roubaix at the end of the daily stage was Vadrines. The second to actually arrive at Roubaix was Garros, but on time he was beaten by Kimmerling, who had started ten minutes later, and arrived six minutes after Garros. "Beaumont" was fourth, and then Vidart, Renaux, Gibert, and Prevost came in in rapid succession, the last mentioned reporting that he had had to come down near Renais to look at his motor, while "Beaumont" had been slowed owing to his motor misfiring. Valentine was tenth. The weather was the best which the competitors had up to then experienced. Duval, in coming down at Lamick St. Quentin, damaged his machine, but hoped to go on later. Prince de Nissolle also intended to fly from Brussels to Roubaix on his Tellier monoplane, but in starting from the Berchem Flying Ground damaged the machine so badly as to preclude his going on. On the 29th ult. the journey was continued to Calais. When the start was to have taken place, at 10 a.m., the sky was overcast, with a chilly wind blowing over the ground at Roubaix. In consequence the start was postponed until one o'clock, when

Vadrines started off punctually, followed at two-minute intervals by Garros, Kimmerling, "Beaumont," Vidart, Renaux, Valentine, Train and Gibert. All these succeeded in getting through with the exception of Valentine, who landed at Wambrether, 15 kilometres from the start, and Train, who came down at Renescore slightly damaging his machine. Early in the morning Lieut. Chevreau on his Blériot monoplane succeeded in flying over from Vincennes, making a stop at Betheny on the way. The first arrival at Calais was Vadrines, and he was followed by Vidart and "Beaumont." Renaux in landing at Marquette, damaged one of his skids and was delayed about four hours, but eventually reached Calais safely. On their arrival at Calais the competitors were notified that the stage to London had been postponed till Monday, and one or two of them decided to take the opportunity to visit England in order to see the competition for the Gordon-Bennett race. The competitors were in fact greatly relieved as they were very tired and had been considering the question of asking for a day's respite. An interesting item of the day's news was the publication by M. Lepine, the Parisian Prefect of Police, of an order forbidding the competitors when returning to Vincennes from flying over Paris and directing them to go round the outskirts of the city. During the day a heavy wind rendered it impossible for the competitors delayed at Roubaix to complete the journey although Train succeeded in getting through from his overnight resting place, while Duval completed the Roubaix stage. On Saturday Tabuteau, Barra and Prevost started from Roubaix for Calais. Wynmalen also got away from Roubaix but only flew half a kilometre and then returned. Prevost did not succeed in getting through, having to come down at Hazebrouck owing to motor trouble but Tabuteau and Barra arrived safely while Train also completed the stage. Duval, who on Saturday attempted to fly from Roubaix to Brussels, made a sudden landing at Meirebeke, near Ghent, slightly damaging the machine.

Sunday was spent by a good many of the aviators in England, while those who stayed in Calais took matters very quietly. Monday morning broke fair, and eleven of the aviators were up betimes, testing their machines in order to see that everything was in good trim. It had been anticipated that a round dozen would start, but Prevost decided not to go on, although he had succeeded in completing the stage to Calais. At four o'clock exactly, as soon as the starting rockets were fired, Vadrines was in the air, and shaping his course by the great arrow laid down at Les Baraques, he soon disappeared out to sea. At three-minute intervals he was followed by Vidart, "Beaumont," Kimmerling, Gibert, Garros, Renaux, Train, Tabuteau, Barra, and Valentine. After the last of the aviators had gone, the crowd still remained at the aerodrome awaiting news of the cross-Channel

EUROPEAN CIRCUIT.—Times[†] of the First Eight Stages.

Pilot.	Machine.	Motor.	Propeller.	Liege. (320 kils.)	Spa Liege. (60 kils.)	Utrecht. (215 kils.)	Brussels.† (145 kils.)	Roubaix (85 kils.)	Calais. (90 kils.)	Hendon. (250kils.)	Total Time.
		h.p.		h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m.	h. m. s.
"Beaumont" ...	Blériot	50 Gnome	Normale	4 2 45½	1 24 45½	2 21 4¾	37 21 0½ (3 12 4)	1 24 25 1 44 39½	3 32	51 40 41	
Garros ...	Blériot	50 Gnome	Integrale	5 3 1½	2 11 37	2 10 21½	38 33 57½ (4 8 31)	1 15 56 2 36 2½	4 9	55 57 55½	
Vidart ...	Deperdussin	50 Gnome	Rapid ...	3 9 54½	0 47 6¾	2 17 29½	54 36 22 1 58 16 1 32 8½	3 27	67 48 15		
Vedrine	Morane	70 Gnome	Integrale	3 39 15½	0 42 21½	22 45 52½	38 0 57½ (2 56 57)	0 58 46 1 16 21½	2 56	70 19 33	
Kimmerling ...	Sommer	70 Gnome	Rapid ...	22 44 35½	10 4 33½	2 35 38	37 34 48 (2 30 38)	1 11 40 1 56 57	3 28	79 36 12	
Gibert ...	R.E.P.	60 R.E.P.	Regy ...	25 4	1 51 2¾	2 4 25¾	38 56 51 (2 34 51)	2 3 19 1 45 41	12 17	84 9 28	
Renaux ...	*M. Farman	60 Renault	Integrale	13 10 0	4 4 14	11 23 57½	39 49 39½ (4 8 13)	1 54 27 5 58 19	12 42	90 48 47½	
Train ...	Train	70 Gnome	Integrale	36 30 53½	9 54 18½	3 29 48½	64 8 53½ (4 9 59)	—	—	—	
Barra ...	*M. Farman	70 Panhard	Integrale	4 3 34½	6 40 32	19 1 43½	61 38 54	—	13 51	—	
Prevost ...	Deperdussin	50 Gnome	Rapid ...	24 8 3	9 23 16½	22 56 4	62 59 45½ (4 43 33)	—	—	—	
Tabuteau ...	*Bristol	70 Gnome	Integrale	23 59 41½	22 15 47	10 55 17½	—	—	5 38	—	
Duval ...	*Caudron	50 Gnome	Normale	4 31 49½	3 14 14½	27 39 51	39 17 49½ (4 19 49)	—	—	—	
Wynmalen ...	*H. Farman	50 Gnome	Integrale	24 19 14	21 41 55	11 58 50½	52 46 32	—	—	—	
Weymann ...	Nieuport	70 Gnome	Integrale	3 55 16½	3 51 47½	2 21 12¾	—	—	—	—	
Amerigo ...	R.E.P.	60 R.E.P.	Regy ...	25 12 40½	7 39 52½	—	—	—	—	—	
Verrept ...	Morane	50 Gnome	Integrale	25 2 14½	10 18 50	—	—	—	—	—	
Le Lasseur de Ranzay	Blériot	70 Gnome	Normale	26 23 34½	12 3 0	—	—	—	—	—	
Bathiat ...	Sommer	70 Gnome	Rapid ...	25 50 54½	—	—	—	—	—	—	
Contenet ...	*Astra	35 Wright	Astra ...	68 10 0	—	—	—	—	—	—	
Molla ...	Sommer	70 Gnome	Rapid ...	109 39 0	—	—	—	—	—	—	
Valentine ...	Deperdussin	50 Gnome	Rapid ...	—	—	—	—	—	3 44	—	

* Biplanes, all the others are monoplanes.

† The times for this stage include a day and a half during which the competitors were delayed by bad weather; the figures in brackets are the actual flying times.

‡ All times are subject to official verification.



"Flight" Copyright.

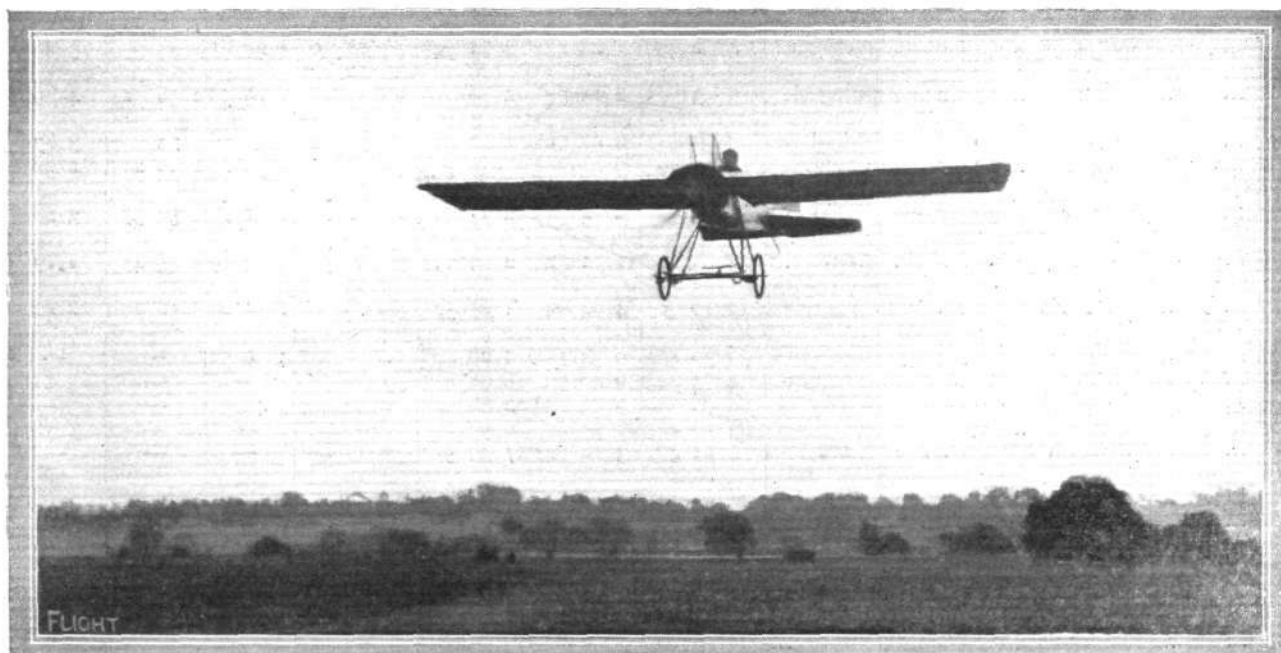
EUROPEAN AVIATION CIRCUIT.—The first man—Vedrine—to arrive at Hendon Aerodrome on Monday, he having started from Calais at 4 a.m., and after making stops at Dover and Shoreham, landed at Hendon at 8h. 34m. 53s. To the left is Thiry, and on the right Ramondon, his two trusty assistants throughout the whole race.

flyers, and at six o'clock a message was received by wireless telegraphy that ten of the aviators had reached Dover. Some anxiety was expressed as to the whereabouts of the odd man, but

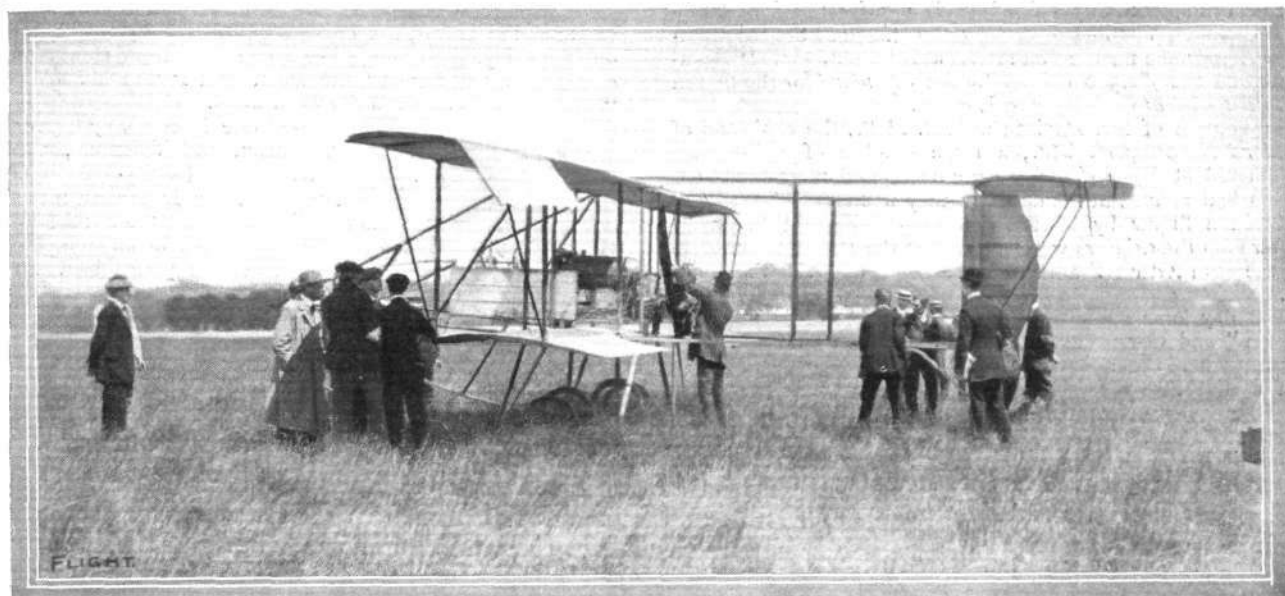
soon after seven a further message was received to say that all had arrived, and then the crowd, before breaking up, indulged in rounds of cheering. Of the aviators who had not reached Calais, Wynmalen set out to fly from Roubaix to Calais, but made a precipitate landing at St. Omar, resulting in some *bois cassé*. Duval, also pluckily continuing in the competition, flew from Brussels to Roubaix.

Realising that aviators were very early birds, the inhabitants of Dover roused themselves early; but even then were none too soon, for almost immediately after the three Dover tugs had got to their positions between the four French destroyers placed in a line across the Channel came the news that Vedrine had left Calais. About half-past four he was sighted somewhere about mid-Channel, and a few minutes later, guided by the smoking bonfires which had been lighted on the cliff, and the captive balloon, he arrived at the aerodrome, and landing in faultless style, was greeted by his wife. Then at very brief intervals followed Vidart, Gibert, "Beaumont," Kimmerling, and Garros, each one landing to a great outburst of cheering. The last five to arrive came in a bunch led by Valentine, followed very closely by Train, Tabuteau, Renaux (who has been accompanied throughout by his passenger, Senouques) and Barra. They were received by the Mayor and Mayoress, Sir William and Lady Crundell, General Inglefield, commanding at Dover, and other members of the Reception Committee, whose guests they were at breakfast. The times taken for the cross-Channel trip are shown in the accompanying table, and it will be seen that they are all a good deal more than that occupied by M. Blériot and others, this doubtless being accounted for by the head wind. The aviators only indulged in about an hour's rest at Dover, and at six o'clock Vedrine led the way for Shoreham, the other competitors following at intervals of a few minutes in the order of their arrival with the exception of Barra, who was delayed for an hour attending to his engine. Vedrine was the first to reach Shoreham, the trip taking him one minute over an hour and a quarter. From the time of his arrival up to eight o'clock the other competitors came in in quick succession, with the exception of Renaux, Barra and Train. Barra had to descend at Heathfield, near Eastbourne, and there spent ten hours in adjusting his machine, while Renaux, after landing near Bodiam Castle, on the Kentish border, sent to Shoreham for mechanics and was delayed seven hours. Train missed his bearings and in landing at Newhaven chose a rather awkward spot; his machine ran backwards into a wire fence, and although the damage was not serious it would take some time to repair.

Only a short stop was made at Shoreham, Vedrine leaving there at 7.33 and the others following him again in the order of their arrival, Tabuteau bringing up the rear at 8.20. At Hendon, Vedrine arrived if anything rather too early and the extremely large force of policemen, having no crowd to look after, were able to give their attention to the flyer and his machine. The news that the aviators were on their way to London quickly spread, however, and in the extremely rapid manner characteristic of the London crowd, the number of spectators mounted up until several thousand were there to give a welcome cheer to the later arrivals. About



EUROPEAN AVIATION CIRCUIT.—Valentine, the only British aviator, arriving at Hendon on his Deperdussin machine.



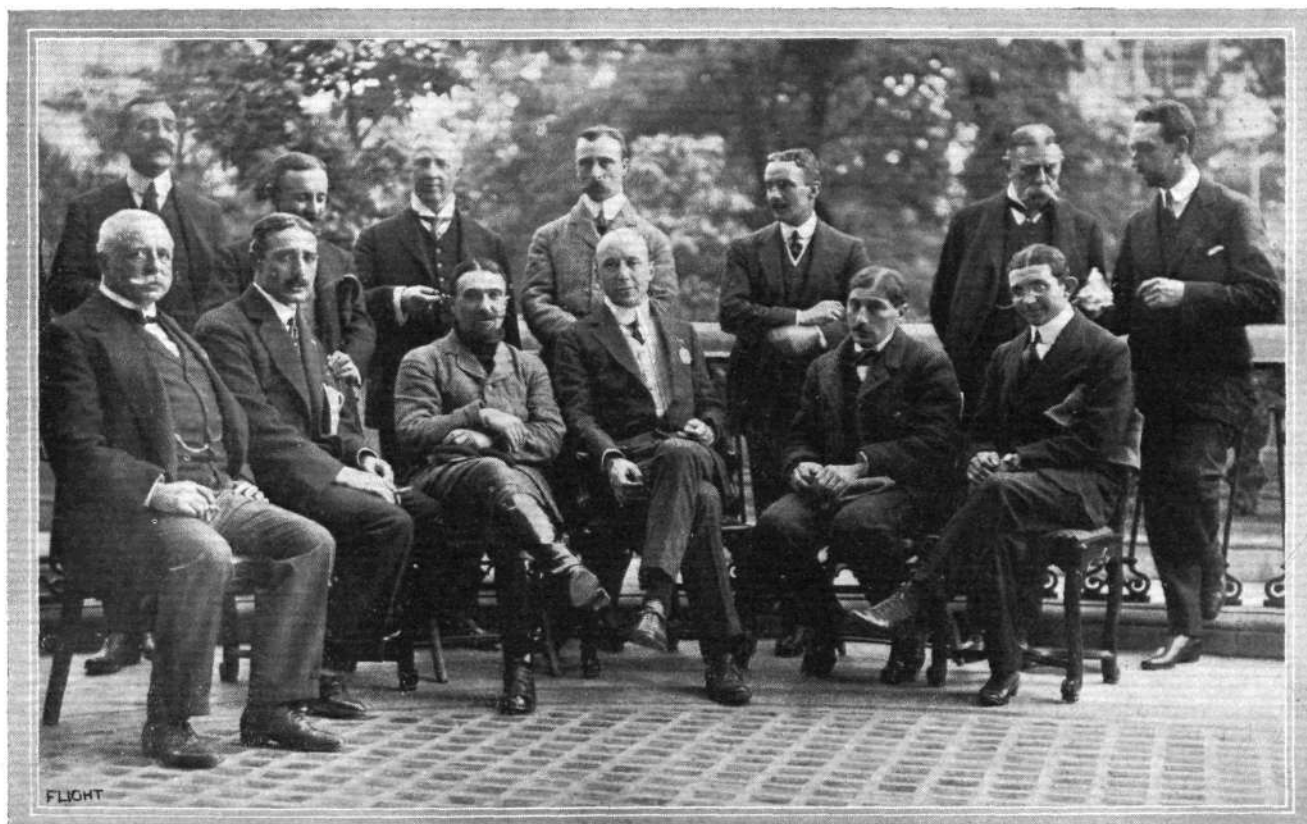
EUROPEAN AVIATION CIRCUIT.—M. Tabuteau immediately after his descent at Hendon on the British-built Bristol biplane.

20 mins. later Vidart arrived, hunted by Kimmerling and "Beaumont."

Valentine landed about half-past nine, while practically at the same time Garros arrived. Then there was an interval, during which the band of the 1st Life Guards helped to while away the time, and at eleven o'clock Tabuteau, on the Bristol biplane, after losing his way badly, landed. Thus far 7 out of the 11 who started from Calais had reached Hendon, and it was known that Train, Renaux, and Barra were delayed, but Gibert was missing. It subsequently transpired that he also had lost his way in the neighbourhood of Croydon, and had had to land at Holmwood, near Dorking. In coming to earth the machine had been slightly damaged, but the pilot was able to repair this, and landed at Hendon ultimately at six o'clock. Barra and Renaux were also able to complete the stage, reaching the London Aerodrome at half-past seven and half-past eight respectively.

The following table gives the times of the competitors over the three stages from Calais to Hendon:—

Aviator.	Calais-Dover.		Dover-Shoreham.		Shoreham-Hendon.		Total.
	h.	m.	h.	m.	h.	m.	
Védérines ...	0	38	1	16	1	2	2 56
Vidart ...	0	43	1	26	1	18	3 27
"Beaumont"...	0	44	1	31	1	17	3 32
Kimmerling ...	0	43	1	31	1	14	3 28
Gibert ...	0	38	1	21	10	55	12 17
Renaux ...	1	2	9	4	2	17	12 42
Garros...	0	46	1	40	1	43	4 9
Tabuteau ..	0	55	1	51	2	52	5 38
Barra ...	1	1	11	25	1	25	13 51
Valentine ...	0	43	1	43	1	18	3 44
Train ...	0	43	—	—	—	—	—



EUROPEAN AVIATION CIRCUIT.—Reception of aviators at the Royal Automobile Club after the finish at Hendon. From right to left (seated): MM. Weymann, Tabuteau, Mervyn O'Gorman, "Beaumont," Kimmerling, and Roger Wallace, K.C. (Chairman of the R.Ae.C.). On the right, standing, are Mr. Davison Dalziel, M.P., and Mr. Holt Thomas.

Gibert won the £100 Cup offered by Dover for the fastest trip across the Channel, Vedrines took the £200 offered by the Brighton-Shoreham Aerodrome for the first arrival at Brighton, while "Beaumont" secured the £2,500 offered by the *Standard* for the first in the *classement général* from Paris to London.

At the invitation of Mr. Davison Dalziel, M.P., the chairman of the *Standard* Newspapers, Ltd., a large number of well-known people gathered at Hendon to greet the flyers, and after the seven competitors had arrived in the morning they witnessed several very good exhibition flights by Messrs. Grahame-White and Paterson. In the afternoon the aviators were received at the Royal Automobile Club by the Hon Arthur Stanley in the absence of H.H. the Duke of Teck.

The next day some exhibition flights were made at Hendon by "Beaumont" and Garros, as well as Mr. Compton Paterson. On Tuesday afternoon the aviators and officials were entertained to luncheon at the Savoy Hotel by the *Standard* newspapers, Mr. Davison Dalziel presiding. Among the speakers at the lunch were Mr. Roger Wallace, K.C., M. Georges Prade, Mr. Dalziel, "Beaumont," who replied for the aviators, Lord Northcliffe, and Count Castillon. The number of arrivals in England was added to during Tuesday, for Duval, on the Caudron, flew on from Roubaix to Calais in the early morning and later crossed the Channel. The passage was a difficult one owing to fog, and the strong winds carried him off his course in the direction of St. Margarets, so that he eventually landed at Poulton Wood. Having ascertained his whereabouts, he then was able to fly back to the A.I.R. Aerodrome at Dover, where, after having replenished his petrol tank, he was away again at 5.17, but he had to descend at Lewes.

A note of interest is that all the first arrivals at Hendon used maps prepared by Mr. E. Clift, while Valentine was also using one of the special "Clift" compasses.

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MR. BARBER MAKES A CROSS-COUNTRY FLIGHT.

AFTER having carried out his arrangement at the Shoreham Aerodrome for giving exhibition flights during last week, Mr. Barber on Wednesday morning last, starting about 5 a.m. from the Shoreham Aerodrome, accompanied by Miss Edith Meeze, a pupil of the Valkyrie School, as passenger, made a two hours' cross-country flight to Hendon. In this trip he was using the small Gnome-engined racing Valkyrie, which was designed to carry one person only. Therefore, taking a second person on the machine and making the trip without a hitch from Shoreham to Hendon is a remarkably praiseworthy achievement to have accomplished. Incidentally, thereby Miss Meeze can probably lay claim to be the first lady who has been favoured with so long a cross-country flight. Moreover, she did not prove a mere dead weight, as, being quite at home upon an aeroplane, she manipulated the map by which Mr. Barber sought his way, and finally was able to espy Brooklands Aerodrome some seven miles ahead even before the pilot had realised he was anywhere near it. Unfortunately the compass which was being used got out of order, and Mr. Barber therefore got right away from his reckoning, passing Brooklands fully 20 miles to the left. He then came down and started off again, but his compass still serving him ill he once

On Wednesday morning it was announced that the daily stage would end at Dover, the cross-Channel trip to Calais being taken on Thursday. Although the stage had been shortened, it was decided to put forward the start, and it was six o'clock when "Beaumont" was given the word to go. Getting away in splendid style, he was followed at two-minute intervals by Garros, Vidart, Vedrines, Gibert, Renaux, Tabuteau, and Valentine, while Barra and Kimmerling followed five and twenty-five minutes respectively after the British pilot on the Deperdussin monoplane. Some time before "Beaumont" was started the unmistakable hum of a Gnome motor heralded the approach of an aeroplane, which proved to be the Army Farman biplane with Lieut. Barrington-Kennett at the tiller and carrying Lieut. Reynolds as a passenger. They had flown over from Aldershot, and had had to make a stop at Southall. During the interval of waiting for the start Lieut. Kennett made several flights round the aerodrome. The first to arrive at Shoreham was Vedrines, and he thereby won a prize of £200. Only staying two minutes, he was easily first at Dover, where he arrived at three minutes past eight. Second place went to Vidart, who, although he was fourth in arriving at Shoreham, only stayed a little over five minutes, and got to Dover at twenty-three minutes past eight. He was followed quickly by "Beaumont," while Gibert and Garros were not long after. Tabuteau and Barra were somewhat slower, and arrived between half-past nine and ten.

This left three who had not arrived—Kimmerling, who reached Dover in the afternoon, having been stopped at New Romney with a troublesome engine; Renaux, who landed at Aldington, west of Dover; and Valentine, who, finding his engine miss-firing, decided to make for Brooklands, where he landed safely.

Thursday the aviators were away from Dover at an early hour to finish the final stages to Paris.

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more got astray and landed at King's Langley, the other side of St. Albans, where he was most courteously received by Mr. Bradford, on whose grounds he came to earth. After a welcome meal hospitably provided by Mr. Bradford the voyagers were again off, and this time managed to reach Hendon without further incident.

On Tuesday night, the evening before his cross-country trip, Mr. Barber indulged in a novel form of trip. At the suggestion of the General Electric Co., he made a flight with commercial goods from Shoreham to Hove, delivering a large case for the Company of Osram electric lamps. Having accomplished his errand, he at once returned to the Shoreham Aerodrome. For this little episode Mr. Barber received a sum of £100, and with generosity only exceeded by that of his recent gift to the Government, he proposes that this sum, together with any other sums of a similar character which he may receive in payment for trips and exhibitions of this nature, he will devote entirely to the giving of prizes in connection with aviation. Those who, therefore, make any arrangements with Mr. Barber on these lines, may have the satisfaction of knowing that they are thereby incidentally helping forward the great cause of aviation.

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SCHOOL AERO CLUB NOTES.

By ROBERT P. GRIMMER, General Secretary, British Federation of School Aero Clubs.

A GREAT deal can be learned from the paper glider, especially with regard to automatic stability. The other day I had sent to me a remarkable specimen, made of notepaper, which, no matter how it was launched, invariably insisted upon coming down on an even keel. I may not make public the principles of this ingenious little contrivance, but I will give to anyone interested the name and address of the inventor. I have pleasure in offering a prize of one guinea in cash for the best paper glider sent to me during July by members of the various school aero clubs affiliated to the Federation.

Since these notes have appeared I have received some hundreds of letters asking advice in reference to model construction, to many of which I have been unable to reply. I feel constrained to take this opportunity of saying that while I am most pleased to answer inquiries from members of the affiliated school aero clubs, if a stamped and addressed envelope is enclosed for reply, I cannot undertake to advise model makers in general unless a shilling postal order is sent, which will be devoted to the general funds of the Federation. These inquiries will, if possible, be answered by return of post, and as I have the co-operation of a practical model maker of skill and experience I have every reason to believe that every satisfaction will be given to applicants.

One of the standard objections to model aeroplane flying as a school sport is that it does not entail sufficient physical exertion, and that it is "only a pastime for the slacker." This is even more of a fallacy than the "frightful perils of aviation" one, to which I referred

recently. The flying of a model looks very simple, and seems to entail no fatigue, but I have again and again gone home from a contest more tired than if I had taken part in a paper chase or a football match. Even the launching of a large model calls for a considerable amount of physical exertion, and the dodging of others in flight entails nearly as much body stretching as a course of physical culture. Obviously the competitor has to be pretty fit who follows his model for half a mile across country, and there are now machines which fly that distance. I have seen tubby fellows who otherwise could not have run for 100 yards do the quarter and half mile in quite respectable times when paced by a model aeroplane. Often the run includes brook-jumping, and if a river exists anywhere in the vicinity of the flying ground, a swim is quite in the realms of possibility. As often as not the model descends in a tree, and the resultant climb brings to the competitor one of the greatest joys of bird's-nesting. Archery and rifle-shooting are by no means to be despised when the machine has to be recovered from a tree, and when bored by a long course of climbing I have employed both these arts with success. The enthusiastic model-maker must also be a sprinter of no mean order. Certainly he is not a slacker.

I call the attention of my readers to the model aeroplane competition that the Arundel House School Aero Club is to-day (Saturday) holding on Littleworth Common, five minutes' walk from Esher Station. A good train leaves Waterloo at 2.28, arriving at 2.57, and the return fare is only 2s.

THE GERMAN NATIONAL CIRCUIT.

IN our last issue we were able to chronicle the progress of this competition up to the time when three aviators had arrived at Munster. On the 28th ult. the eighth stage to Cologne, a distance of 168 kiloms., was to be taken, but Lindpaintner and Volmuller were the only two to start, and they did not get far on their way. Lindpaintner had to come down, owing to motor troubles, 17 kiloms. from his starting point, while Volmuller was brought down by the fog not far off, he having the misfortune to break his propeller on landing. He went back to Munster, and on the following day, after having a new propeller fitted, made a fresh start and got to Wesel, while Lindpaintner decided to go on to Cologne by train.

In the meantime, at Cologne the crowd which had awaited the advent of the flyers were kept interested in flights by Werntgen, Eyring, Jeannin, Schmidt, Schulz, Oelerich and Hoffmann, and it was decided to put off the start from Cologne until Saturday. On the 30th ult. Volmuller succeeded in getting through to Cologne, and

it was then announced that the other competitors had abandoned the circuit. In the meantime, the aviators at Cologne carried out a good deal of flying at the aerodrome, and on Saturday the stage to Dortmund was to be taken, but only Hoffmann actually started, although Volmuller, Koenig, Lindpaintner, and Wittenstein made several circuits of the ground with a view to getting away. Hoffmann, as a matter of fact, did not quite succeed in reaching his destination, having to come down at 5 kiloms. from Dortmund, owing to his petrol supply giving out. He, however, completed the journey on Sunday morning. Then Volmuller, with a passenger, also flew from Cologne to Dortmund. Koenig also started, but his petrol supply gave out when near Essen, and he was forced to land, while Wittenstein, who has been much troubled by the fog, decided to give up at Hamborn. Lindpaintner also started from Cologne, but had only gone a short distance when the old trouble with his motor reappeared, and as it seemed impossible to get it right, he decided to give up.

THE ALVASTON ENGINES.

ALVASTON engines of this year are made in three sizes of 20-h.p., 30-h.p., and 50-h.p. The most powerful has four cylinders opposed while the others are of the twin-cylinder opposed type. The sectional drawing and photograph herewith illustrate the 4-cylinder 50-h.p. model, which is the engine that is attracting most notice among this range of models at the present time and is that with which the manufacturers hope to achieve their greatest success.

The cylinders are of cast iron and are mounted on an aluminium base-chamber by four long tie-bolts passing through steel bridge pieces placed across the cylinder heads. These tie-bolts are very

rock-shaft is therefore controlled by springs, as may be seen from the photograph.

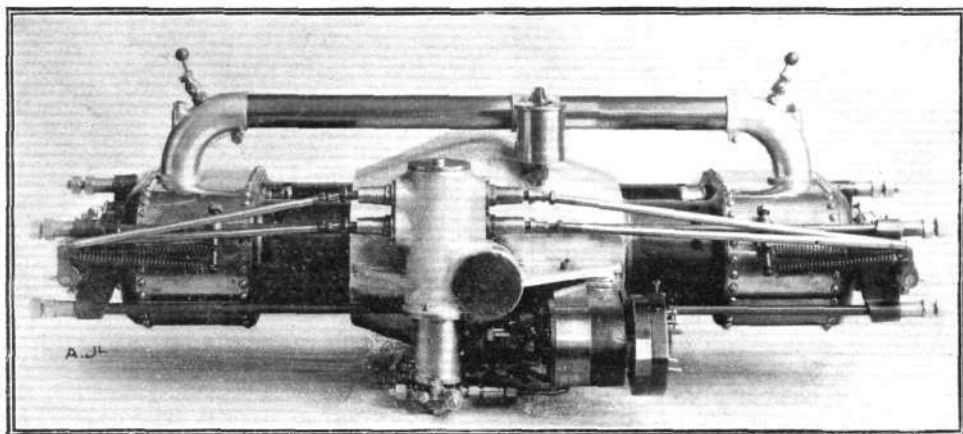
The crank-shaft has two throws at 180 degrees and each crank-pin carries two connecting-rods, one of which is in one piece with the big-end in the usual way while the other is hinged to the big-end cap by a knuckle joint as shown in the drawing.

Water cooling is employed and the water space is partially enclosed by copper jackets held in place by a large number of screws. The water space round the cylinder heads and the valve-chambers, however, is cored in the casting. It will be observed that the induction-

pipe, which lies along the top of the engine and is fed from a central float-feed carburettor, communicates with the valve-chambers through passages cored between the cylinders. The ignition plugs, like the valves, are placed in the cylinder-heads; the magneto is mounted sideways on the crank-chamber so as to be driven by bevel gearing from the cam-shaft.

Lubrication is effected by a pump of the Rotherham plunger type operated from the bottom of the cam-shaft. It delivers oil under a normal pressure of 12 lbs. per sq. in. to the bearings, whence it flows through the hollow crank-shaft to the connecting-rod big-ends.

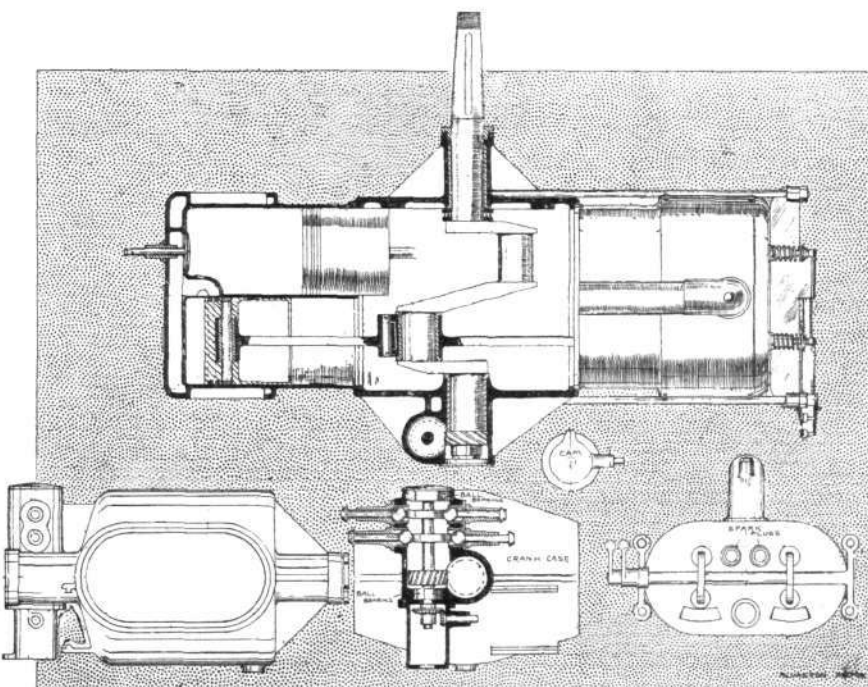
The dimensions of the 50-h.p. engine are 115 mm. bore by 127 mm. stroke. It develops its rated power at 1,200 r.p.m., and its weight, inclusive of magneto, carburettor, oil and water pumps, is 172 lbs. The working compression is stated to be in the order of 95 lbs. per sq. in.



The 50-h.p. Alvaston flight engine, showing the vertical cam-shaft, the magneto, and the valve-operating mechanism.

clearly illustrated in the photograph, and the compact manner in which they brace the entire motor into one unit is self-evident therein. The cylinders themselves are cast in pairs so that when the tie-bolts are released the engine can be dismantled into three principal component parts consisting of two cylinder castings and the crank-chamber. The bridge pieces, which naturally form rather important members in the construction, are made of chrome vanadium steel and are milled to an H-section. They serve a secondary purpose in that the valve-tappet shafts are carried in bearings forged solid with the bridge pieces.

The arrangement of the valves is interesting and ingenious. They are all situated in the cylinder heads, the inlet and exhaust valves of each cylinder being placed on opposite sides of the central rock-shaft that operates them. This shaft carries two arms and the same rock-shaft thus serves to operate both valves. The rock-shaft itself is controlled by an oblique push-rod worked off a cam that is driven by worm gearing from the crank-shaft. The cam-shaft, as the photograph and drawing both indicate, is set vertically in front of the crank-chamber and *desaxé* to the crank-shaft that drives it. It carries two cams machined from the solid and each cam operates two push-rods. Adjacent push-rods operate two concentric rock-shafts, as shown in the drawing, and thus all four valves at each end of the engine are controlled in a particularly compact manner. The push-rods are capable of transmitting thrust only and the return action of the



Sectional drawing of the 50-h.p. Alvaston flight engine.

CORRESPONDENCE.

* * The name and address of the writer (not necessarily for publication) MUST in all cases accompany letters intended for insertion, or containing queries.

Correspondents communicating with regard to letters which they have read in **FLIGHT**, would much facilitate ready reference by quoting the number of each such letter.

NOTE.—Owing to the great mass of valuable and interesting correspondence which we receive, immediate publication is impossible, but each letter will appear practically in sequence and at the earliest possible moment.

The Helicopter.

[1252] Referring to "Helic's" letter in your issue of June 20th re my supposed error in helicopter design.

I may say that if "Helic" will go into the question with the sketch of my proposed machine before him, which was published in your issue of May 20th, I think I can convince him that in my case, at any rate, such an error is non-existent.

In the first place the two helical screws, E and E', each rotating in opposite directions, would only give a backward or forward pull when inclined at an angle from the horizontal or normal position in flight, and this angle the machine could only assume at the will of the pilot owing to the resistance set up by the main planes.

In the event of the propeller and tractor-screws being stopped in flight, the machine is so balanced that it would keep on an even keel, and any tendency to dip should be forward, and the helical screws would then only tend to help the forward flight of the machine together with a powerful lifting effect, which would be operative even at a slow speed.

The mode of starting such a machine would probably be as follows:—To start, with all screws driving at maximum efficiency, a short run would be made with the tail-end well up in the air, and at a certain speed the two helical screws would begin to take the weight of the machine in conjunction with the lifting planes, G, and as regards the additional pressure due to the increased speed, it can easily be seen that this only makes the screws more efficient, and does not interfere in any way with the travel of the machine in a forward direction, in fact by warping the wings the machine could be inclined at an angle which would result in all the screws pulling in a forward direction.

It is more a question of suitably disposing of the screws in conjunction with the plane surfaces to overcome any tendency to drive backwards than in depending on helical screws alone for all movements, because in my opinion a machine with helical screws only would be practically unmanageable.

I may say that I have, in order to test the action of the helical screws in flight, made a model in which the propeller and tractor-screws were arranged to run out before the helical screws, the result being that when started the machine rises rapidly and travels forward well until the propeller and tractor are run down, when the helical screws give a decided lift in what appears, from the ground, to be an almost vertical direction before the model tips over and drops to earth.

A model embodying helical screws is easily made, and provides interesting study, for although it probably could not make such long flights as the original type owing to its increased weight, it is possible to get much higher flights, and if the propellers are accurately matched it is a very stable machine.

Because machines and models of a certain type can and do fly, we must not be led to think that types embodying entirely different principles cannot be made to do likewise. We are only on the fringe of this great flight question, and it is quite within the bounds of possibility that the accepted machine of to-day may become obsolete to-morrow, as has been the case in almost every other branch of engineering.

Coventry.

WILLIAM A. WEAVER.

"An Irresponsible Law Congress."

[1253] I read your interesting article on "An Irresponsible Law Congress" in your issue of June 17th, and I think the following extracts from the German aeronautical paper, *Flugsport*, may interest you.

The article, which is entitled "The First International Law Congress," is written by Dr. Alex. Meyer, lawyer, who was the German representative of the Comité International Juridique de l'Aviation. The opening sentence runs as follows: "On May 31st and following days the First International Law Congress, which was formed by the Comité International Juridique de l'Aviation, met. This Comité International Juridique de l'Aviation was founded in the autumn of 1909, and is an international and scientific meeting of lawyers, professors, judges, &c., with a technical department as advisors." Then follows an explanation of the aims of the Congress,

which gives one the idea that it is formed at the expressed wishes of the countries represented.

Another article by the same personage appears in the *Deutsche Zeitschrift für Luftschiffahrt* in very nearly the same words, and as these two papers are the most widely read by the aeronautical public of Germany, they will give an entirely false impression as to the status of the Congress, and much harm will be done.

Schramberg, July 1st.

E. W. COLVER.

Cross-Sea Flying—Scotland to Ireland.

[1254] Understanding that aviators are this year to devote their energies more than ever to cross-sea flying, I shall be glad if you will kindly permit me, through your columns, to suggest that a flying competition be arranged between Donaghadee and Portpatrick—the narrowest part of the Irish Sea and a distance of only 18 knots. A meeting of this kind would be an impetus to Irishmen (who are never wanting in courage) to take more interest than they do in aviation, and might lead to the establishment in a few years of a regular service of aeroplanes between Ireland and Scotland. I believe such a service would pay well. Several suitable sites for landing and starting could be got at Donaghadee, which is near Belfast, and one of the best watering places in Ireland.

Belfast, June 30th.

PETER HALPIN.

The Vortex Principle of Flight.

[1255] The letter of Mr. Cooper, which appears in your issue of June 17th, commenting upon my article on the above subject, contains no intelligent criticism or reasoned argument, no logical deduction, no new fact, and no new theory. It consists entirely of his own dogmatic assertions unsupported by a particle of evidence.

Your correspondent's fear that my article will excite ridicule is entirely groundless. It was submitted for independent criticism to three gentlemen holding science qualifications before being sent to the Editor, and the opinions which it has since elicited from consulting engineers and others, competent to judge, are entirely at variance with the views of Mr. Cooper. Demonstrations by working models have been given by me before the chief examiners of the Berlin, Stockholm, and Christiania patent offices, to the complete satisfaction of those gentlemen, and experts consulted by me, both British and foreign, entertain no doubt at all as to the complete success of the flying machine upon this principle, for which working drawings are now being prepared.

Mr. Cooper appears to be unable to discriminate between the principle, or natural law, which is the subject matter of my article, and the application of that principle by mechanical means as illustrated in the flight of the gadfly. He attacks the latter only, and, having denied the accuracy of my description, claims to have proved the falseness of the principle. The logic is that of "Alice in Wonderland" deprived of all its wit and humour. One might as well claim to control the weather by manipulating the barometer. Whatever principle the insect may depend upon for its powers of flight, it is quite certain that the laws of motion and the inertia of the air do not depend upon the insect.

Mr. Cooper denies that the wing of the fly has a rotary motion and that it creates a vortex in the air. The affirmative can be proved in several ways, each one complete in itself and conclusive to the mind of any unprejudiced person possessing some knowledge of mechanics and physics. As the result of years of observation and experiment I have no hesitation in asserting that there is no other principle than the one described by me which can account for the well known evolutions of the fly. The wings of birds and insects have been described as "oscillating propellers" as long as I can remember. It is a loose expression devoid of any definite meaning.

Nowhere in the article have I said that a revolving shaft with vanes attached is a mechanical reproduction of the motion of the fly's wing. The latter, of course, cannot revolve, but it can, and does, rotate by swinging round so that the free end describes a circle in the air. I believe that I am correct in saying that Marey, many years ago, pointed out this fact and drew attention to the lemniscus—shown in dotted lines in my diagram of the vortex—traced by the two edges of the wing.

July 1st.

T. A. DRING.

Aeroplanes in Military Warfare.

[1256] I was much interested by Mr. O. D. Atkinson's article on "Aeroplanes in Military Warfare," but there were one or two points in connection with both the diagram and the explanation which seem to call for further explanation.

The accuracy of the mathematics compels my admiration, but the calculations seem to be rather relying on the fact of [the "bomb-dropping" tube being vertical.

Either the tube is rigidly connected to the aeroplane, and the whole machine is kept horizontal when passing near the enemy (an operation with which the elements might interfere), or our military aeronaut has provided himself with some form of gyroscopic pendulum.

Another difficulty which arises is the necessity of knowing your "course" over the ground, as the plane of the instrument would have to be in line with the resultant course of wind and motion, and not in the fore and aft line of the aeroplane.

And as this relative course would alter with any variation of wind strength, the ensuing adjustment would have to be made rather rapidly and very accurately to obtain good results.

The procedure of tracking an army along a road would seem to be quite needless if an ordinary cross-wire telescope were substituted for the "telescope on the pin-hole system."

The barometer would need constant calibrating for really accurate results, as an error of even $\frac{1}{16}$ in. means an error of about 8 ft., and far larger errors than that are to be expected.

Although such airships as have from time to time fallen into the hands of the Army have not met with very marked success, yet I think that Mr. Atkinson's wholesale condemnation of dirigibles is hardly justified.

Am I to understand from the statement that "the shell is blown to pieces on explosion," that these pieces never reach the earth, and are, therefore, not capable of doing any damage? Or does the shell undergo atomic disintegration, and settle as fine dust on the gun's crew below?

I cannot make out whether the sketch is to scale, but the unfortunate operator apparently has the choice of handling a 6 ft. telescope or attempting to annihilate the enemy with a half-inch bomb.

The gymnastics necessary to set the scale, manipulate the slide-rule, look through the telescope, and operate the bomb-dropping mechanism, which is apparently worked by cords in a position too remote to be shown on the sketch, would be rather disconcerting even to the most experienced of military aviators.

Portsmouth, July 1st.

D. H. T.

[1257] I have been much interested in an article by Mr. O. D. Atkinson, entitled "The Aeroplane in Military Warfare" which appears in your issue of June 17th. There are several useful suggestions in his remarks which help towards the solution of the bomb-dropping problem, but unfortunately there appear to me to be two serious errors which render his method as a whole useless. First he takes his speed readings from an anemometer fixed on the machine. Now for the purpose of such calculations as are necessary for ascertaining the exact moment at which the bomb must be released the speed factor which requires to be found is the speed of the machine relative to the earth. An anemometer attached to the machine will not give this since it is only capable of showing the speed of the machine through the air, and that this speed does not necessarily equal the earth speed may be shown by the following example. Suppose that the machine is capable of soaring at 40 m.p.h. This means that its speed through the air must always be 40 m.p.h., whatever wind is blowing and in which-ever direction. If a wind of 40 m.p.h. is blowing dead in the pilot's face, the soaring conditions will be fulfilled if the motion with relation to the earth is nil, consequently if the pilot base his calculations on the anemometer reading, which will, of course, be still 40 m.p.h., or the equivalent in ft. per sec., he will most certainly miss his target by a very large margin. If the soaring speed of a machine is 40 m.p.h., an anemometer fixed thereon will always read 40 m.p.h. under all conditions, except in the case of gusts, when a momentary rise or fall will follow. It is therefore evident that except in the case of a dead calm the anemometer will never register the earth-speed of the machine, and is, therefore, perfectly useless for the purpose proposed.

Again Mr. Atkinson presumably is depending upon the barometer to give him the correct value for his factor, h . The barometer registers height above sea-level, and since the target to be aimed at may in many cases be itself at some considerable elevation, the error in taking the barometer reading as equivalent to h may be very serious.

The whole question of bomb-dropping is an exceedingly interesting one, but it is at present most difficult of solution. Until some method is devised for accurately measuring the earth-speed of the machine from which the explosives are to be released and the true height above the target at which the machine is soaring no reliable solution can be found and it is towards the production of such devices that effort should be directed.

Another factor in the problem and one which Mr. Atkinson appears to ignore altogether is the effect of any wind which may be blowing during the time of fall upon the bomb. If the fall is great

and the wind high the error introduced by neglecting this effect will be serious. Up to now it is practically impossible for an aviator in flight to tell accurately in which direction the wind is blowing or its force. He can only roughly estimate by observing the effect on outside objects. Another device will therefore be needed for showing both the direction and force of the wind.

I must apologise for the length of this letter but the errors in the article named are so common on the part of writers on this subject that attention needed calling to them.

June 30th.

ERNEST A. VESSEY.

MODELS.

Twisting Tails on Models.

[1258] I notice from the correspondence appearing in FLIGHT from time to time there seems to be a doubt as to who is the originator of the "twisting tail device" for steering aeroplanes.

In your issue of February 25th last S. P. Elliott (1083) states that he tried this arrangement on a glider, but he is good enough to say "he does not claim it as an original discovery."

C. B. Ridley (1199), however, in FLIGHT of June 3rd claims to be the practical inventor of the tail-twisting device, for, he says, he used it on his full-sized glider constructed so far back as April, 1910.

Again, in this week's issue I see W. H. Norton (1248) also thinks he must be "original," as he has not heard of this method being brought into use before.

I would point out that I think I may rightly claim the honour of being "first in the field" with this (as I term it) helicoidal steering arrangement.

The plans of my model monoplane No. 2 were completed in 1908, the machine built in the last few months of 1909, and exhibited at Olympia in March, 1910. This same model was again on show at this year's Aero Exhibition.

It may also interest your readers to know that I had a similar arrangement on my first model which I designed and built so long ago as 1907.

This, I hope, dispels all doubt as to who was the first to put this device into practice, however much indecision remains as to who first conceived the theory.

Ilford, July 3rd.

FRED COLLINS.

Model Duration Records.

[1259] Re letter 1244, Mr. D. Holmes is certainly to be congratulated on the remarkable durations obtained by his model. Machines like this are anything but freaks, and their general efficiency is really marvellous. I suggest, however, that the times have been underestimated, and that the flights were 85, 87, and 90 secs. respectively. It is rumoured in Thames Ditton that the Holmes monoplane is capable of still better durations, and that even 100 secs. is within the bounds of possibility.

As one intensely interested in model flying, I should deem it a great favour if Mr. Holmes would condescend to show me his wonderful machine in flight, and as some recompense for his trouble I will give, if he succeeds in obtaining any duration in excess of 74 secs. (the Mann record), a prize value 5s. either to any aero club that he may nominate or to himself, should he prefer it. This is a sporting offer, and I sincerely hope Mr. D. Holmes will speedily relieve me of my 5s., which should be a comparatively easy feat.

Finally, I must also congratulate Mr. D. Holmes on the success of the Holmes-Ridleyplane, which flew so well on Mitcham Common recently.

Surbiton.

ROBERT P. GRIMMER.

What are Freak Models.

[1260] In the School Aero Club notes published in FLIGHT (No. 131) on July 1st, Mr. R. P. Grimmer makes some very original remarks on the subject of what he calls the "freak" model aeroplane. As I believe Mr. Grimmer is not himself a practical designer of flying models, perhaps he will not take it amiss if I offer a few friendly criticisms of his observations, which, if they were allowed to pass unchallenged, would, I think, damage the reputation of almost every successful model aeroplane at present in use.

To begin with, Mr. Grimmer condemns the use of a large quantity of rubber in proportion to the size of the model, but surely one might, with equal justification, object to the pernicious habit, to which our aviators are all addicted, of carrying large quantities of petrol on their full-size machines, in order to make flights of greater distance and duration. The wound-up elastic motor in the model represents so much potential energy, which is dispersed during the flight, just as the unburnt motor spirit does in the full size machine, the only difference being that in the elastic the energy is *mechanical*, but in the petrol it is *chemical* and requires an internal-combustion engine to convert it into actual mechanical power.

The essential principle of model designing, then, is to plan a light strong frame, which will carry as much rubber as possible, and afterwards to arrange the propellers and surfaces so as to make the most of the store of energy which is put into the elastic motors during the process of winding up.

If we have a number of models, all with the same quantity of elastic, that which flies farthest is the one which requires least energy for a certain distance flown, and that which flies longest requires least energy for a certain time in the air, or in other words, flies with least power, so I think it must be obvious that the models which do the best distance and duration are the most efficient in their respective ways, although, of course, different designs are required for each kind of efficiency.

Then with regard to the large propellers about which Mr. Grimmer is so scornful. If we have a large quantity of rubber it must be in the form of either a long skein with few strands, or a short one with many strands, and consequently, unless we have a long frame, large propellers are necessary to prevent the motors from running down at a high speed, the only alternative being to use comparatively inefficient propellers of long pitch. The short frame has the advantage that it requires a much stronger compression, due to the tension in the wound-up elastic, to buckle it, and so can carry more rubber in proportion to its weight.

The large propellers, too, have the advantage or a smaller percentage slip.

After all, apart from its scientific value, one of the chief uses of the model aeroplane, at any rate to the amateur airman, is to win prizes, and although Mr. Grimmer may have the strength of character to resist the temptation of using big propellers in order to win a contest, I myself should give way to it, and prefer the "empty honour" (not to mention the cash prize) to the feeling of having done my duty by sticking to "eight-inchers."

Nearly all the most successful models of the present day might be called freaks, according to Mr. Grimmer's principles. The well-known "Hamings" model, if reproduced full size, might be fifty feet long, sixteen feet in span, and carry two eight-foot propellers!

The latest Mann model, another of a rather similar type, would be hardly less ridiculous, and the Ridleyplane, which has distinguished itself in this year's competitions, would be a freak of contrasted type, though not differing greatly in proportions from Mr. Ogilvie's "Baby" Wright machine.

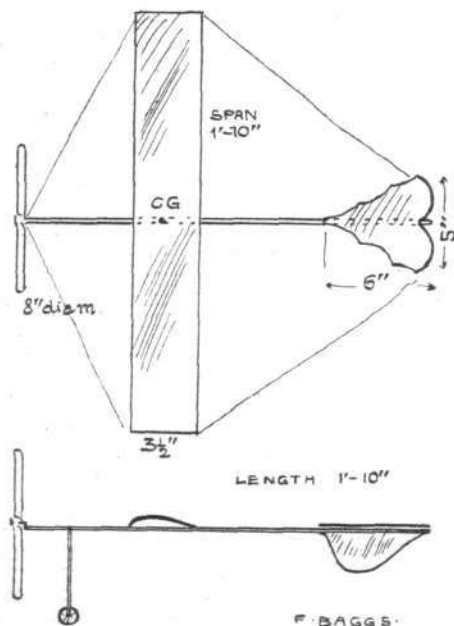
With apologies to Mr. Grimmer, and to you for my encroachment on your space, should you find room for my letter.

Thames Ditton, July 3rd.

D. C. HOLMES.

Model Construction.

[1261] The accompanying sketch shows a simple model monoplane built on a hickory stick of $\frac{1}{8}$ in. by $\frac{3}{16}$ in. section. The wing framework is made of cane and the surfacing material is paper. Steel wire is used for the tail framework, and the propeller is also



of steel wire surfaced with paper. The model will rise from the ground by its own power, derived from ten strands of $\frac{1}{8}$ in. rubber. It will rise in about 3 ft., and will attain an altitude of about 40 ft. The best flights are about 100 ft. in length.

Putney.

F. BAGGS.

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PRINCIPAL CONTENTS.

	PAGE
And the Pity of It!!!	582
Flight Pioneers. (Mr. C. T. Weymann.)	583
Gordon-Bennett Cup Race	584
Royal Aero Club Notes	590
From the British Flying Grounds	591
New Army Biplane	592
Valkyries and the Government	593
British Notes of the Week	593
Foreign Aviation News	594
European Circuit	595
School Aero Club Notes	598
Alvaston Engines	599
Correspondence..	600

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